CELL / MODEL NAME	DESCRIPTION	DATE
BD1001	D bar bending diagram for curb with Type T railing	
BRGINT	Bearing detail for integral abutment with steel beams	
CLAMP	Shear key clamping details at stage construction joint	
CONN	Stud shear connector details	
D4X12	4 in x 12 in drain details	
DD1004	Curb section for deck beams with Type T railing	
DD1005	Drain detail for PPC deck beams	
DD7001	Section at abutment with Neoprene Expansion Joint	
DIAPH	Diaphragm details for girders < 48"	
DKBM01	Section thru fixed abutment for 11" or 17" PPC deck beams with bit surface and waterproofing	
DKBM02	Section thru fixed abutment for 21" thru 33" PPC deck beams with bit surface and waterproofing	
DKBM03	Section thru fixed abutment for 11" or 17" PPC deck beams with concrete wearing surface	
DKBM04	Section thru fixed abutment for 21" thru 33" PPC deck beams with concrete wearing surface	
DKBM05	Section thru expansion abutment for 17" PPC deck beams with bit surface and waterproofing	
DKBM06	Section thru expansion abutment for 21" thru 33" PPC deck beams with bit surface and waterproofing	
DKBM07	Section thru expansion abutment for 17" PPC deck beams with concrete wearing surface	
DKBM08	Section thru expansion abutment for 21" thru 33" PPC deck beams with concrete wearing surface	
DKBM09	Section thru fixed pier with bituminous surface and waterproofing	
DKBM10	Section thru expansion pier with bituminous surface and waterproofing	
DKBM11	Section thru fixed pier with concrete wearing surface	
DKBM12	Section thru expansion pier with concrete wearing surface	
DS-11	Drainage Scupper, DS-11	
DS11L	Drainage Scupper, DS-11 details, left drain	
DS11R	Drainage Scupper, DS-11 details, right drain	
DS-12	Drainage Scupper, DS-12	
DS12L	Drainage Scupper, DS-12 details, left drain	
DS12R	Drainage Scupper, DS-12 details, right drain	
DS33	Drainage Scupper, DS-33	
DS33R	Drainage Scupper, DS-33 details, right drain	
EXPJT	2 1/2" PJS no wearing surface	
EXPJT1	4" PJS no wearing surface	
EXPJT2	2 1/2" PJS with wearing surface	
EXPJT3	4" PJS with wearing surface	
EXPJT4	1 3/4" PJS no wearing surface	
GN1	General note 1	
GN2	General Note 2	

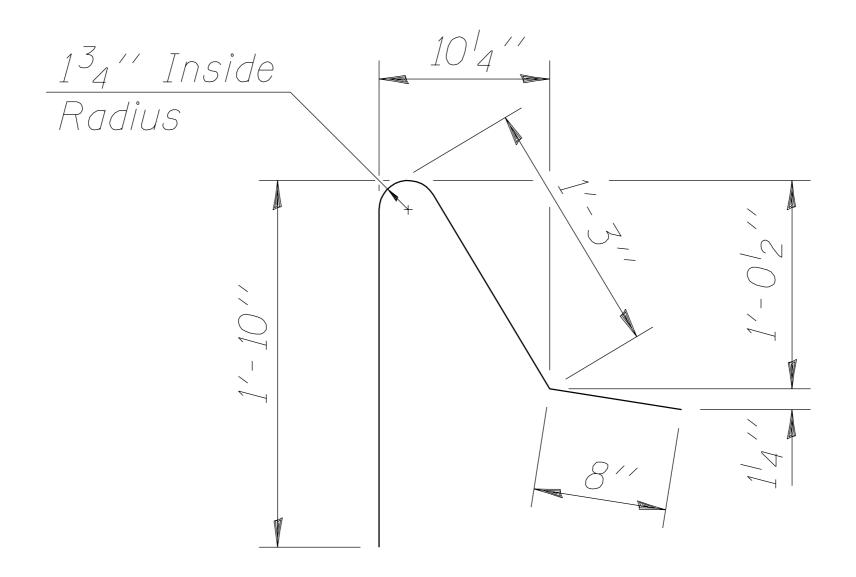
CELL / MODEL NAME	DESCRIPTION	DATE
GN3	General note 3	
GN4	General Note 4	
GN5	General Note 5	
GN6	General Note 6	
GN8	General Note 8	
GN10	General Note 10	
GN14	General Note 14	
GN15	General Note 15	
GN16	General Note 16	
GN17	General Note 17	
GN18	General Note 18	
GN19	General Note 19	
GN20	General Note 20	
GN21	General Note 21	
GN23	General Note 23	
GN24	General Note 24	
GN25	General Note 25	
GN26	General Note 26	
GN28	General Note 28	
GN30	General Note 30	
GN31	General Note 31	
GN32	General Note 32	
GN33	General Note 33	
GN34	General Note 34	
GN36	General Note 36	
GN37	General Note 37	
GN38	General Note 38	
GN39	General Note 39	
GN40	General Note 40	
GN41	General Note 41	
GN42	General Note 42	
GN43	General Note 43	
GN44	General Note 44	
GN45	General Note 45	
GN46	General Note 46	
GP0001	Phoebe nesting site	

CELL / MODEL NAME	DESCRIPTION	DATE
GP0002	Design specifications, stresses and loading	
GP0003	Section thru integral abutment for PPC beams	
GP0004	Section thru integral abutment for steel beams	
GP0005	Total Bill of Material, 15 line	
GP0006	Total Bill of Material, 20 line	
GP0007	Total Bill of Material, 25 line	
GP0008	Total Bill of Material, 30 line	
GP0009	Name Plate	
GTBRAC	Geotextile Wall Brace	
GTWALL	Geotextile wall procedure	
NOTES	Note placement text nodes	
PARJNT	Parapet joint details	
PARJNT1	Parapet joint at sidewalk	
PI1	Removal and Disposal of Unsuitable Material	
Pl2	Porous Granular Embankment	
PI3	Stone Riprap, Class A	
PI4	Stone Dumped Riprap, Class A	
PI5	Filter Fabric for use with Riprap	
PI6	Removal of Existing Structures	
PI7	Removal of Existing Superstructures	
PI8	Concrete Removal	
PI9	Bridge Handrail Removal	
PI10	Handrail Concrete Removal	
PI11	Removal of Existing Concrete Deck	
PI12	Structure Excavation	
PI13	Cofferdam Excavation	
PI14	Rock Excavation for Structures	
PI15	Cofferdams	
PI16	Driving Steel Piles	
PI17	Floor Drains	
PI18	Preformed Joint Seal "	
PI19	Neoprene Expansion Joint "	
Pl20	Concrete Structures	
PI21	Concrete Superstucture	
Pl22	Bridge Deck Grooving	
PI23	Seal Coat Concrete	

CELL / MODEL NAME	DESCRIPTION	DATE
PI24	Protective Coat	
PI25	Elastomeric Bearing Assembly, Type	
PI26	Precast Prestressed Concrete Deck Beams	
PI27	Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams	
PI28	Furnishing and Erecting Precast Prestressed Concrete I Beams, "	
PI29	Precast Concrete Panel	
PI30	Precast Concrete Plank	
PI31	Precast Prestressed Concrete Plank	
PI32	Furnishing and Erecting Structural Steel	
PI33	Furnishing and Erecting Structural Steel	
PI34	Stud Shear Connectors	
PI35	Structural Steel Repair	
PI36	Cleaning and Painting Steel Bridge No.	
PI37	Reinforcement Bars	
PI38	Reinforcement Bars, Epoxy Coated	
PI39	Aluminum Railing, Type L	
PI40	Steel Railing, Type	
PI41	Steel Bridge Rail	
PI42	Slopewall Inch	
PI43	Furnishing Metal Pile Shells "	
PI44	Furnishing Steel Piles HP x	
PI45	Furnishing Concrete Piles	
PI46	Driving and Filling Shells	
PI47	Driving Concrete Piles	
PI48	Test Pile Metal Shells	
PI49	Test Pile Steel HP x	
PI50	Test Pile Concrete	
PI51	Metal Shoes	
PI52	Steel Sheet Piling	
PI53	Temporary Sheet Piling	
PI54	Temporary Bridge Rail	
PI55	Name Plates	
PI56	Expansion Bolts 3/4 Inch	
PI57	Concrete Box Culverts	
PI58	Waterproofing Membrane System	
PI59	Sand Backfill	

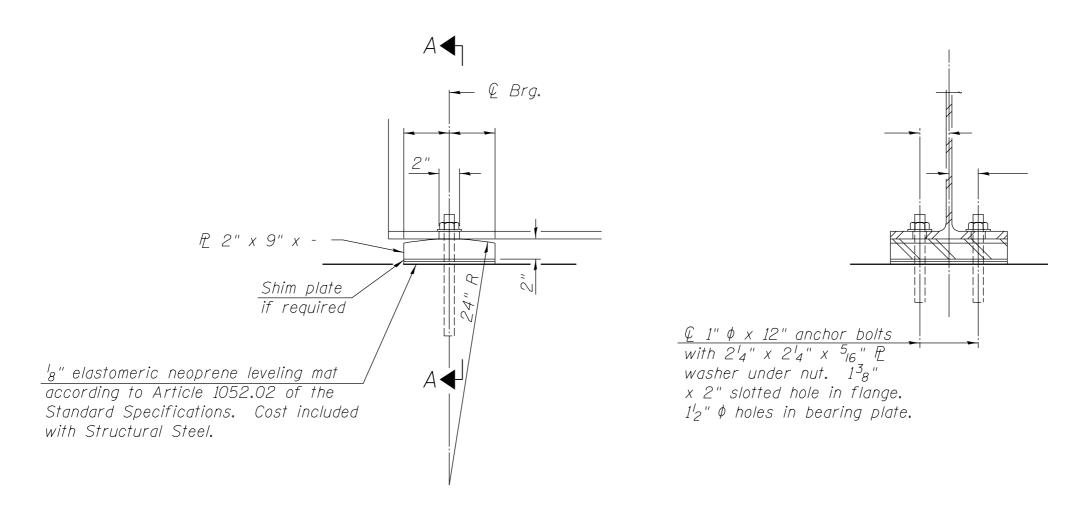
CELL / MODEL NAME	DESCRIPTION	DATE
PI60	Bridge Seat Sealer	
PI61	Epoxy Crack Sealing	
PI62	Temporary Concrete Barrier	
PI63	Floating Bearing, Guided Expansion	
PI64	Floating Bearing, Non-Guided Expansion	
PI65	Floating Bearing, Fixed	
PI66	Drainage Scupper, DS-12	
PI67	Drainage Scuppers, DS-33	
PI68	Bridge Joint System (Expansion)	
PI69	Bridge Joint System (Fixed)	
PI70	Drainage Scuppers, DS-11	
PI71	Bar Splicers	
PI72	Drilled Shaft in Soil " Dia.	
PI73	Drilled Shaft in Rock " Dia.	
PI74	Drainage System	
PI75	Jacking and Cribbing	
PI76	Temporary Support System	
PI77	Temporary Wall Bracing System	
PILENC	Pile Encasement Details	
PJS	PJS details	
RRAP	Riprap anchor detail	
SMR01E	Side mount rail details for PPC deck beams with concrete wearing surface	
SMR02E	Side mount rail details for PPC deck beams with concrete wearing surface	
SMR03E	Side mount rail details for PPC deck beams with concrete wearing surface	
SMR04E	Side mount rail details for PPC deck beams with concrete wearing surface	
SWSEC	Section thru sidewalk	
TABLE1	LFD Moment and reaction tables with notes for steel beams	
TABLE2	LFD Moment and reaction tables with notes for PPC beams	
TABLE3	LRFD Moment and reaction tables with notes for steel beams	
TABLE4	LRFD Moment and reaction tables with notes for PPC beams	
TMPBRR	Temporary Concrete Barrier	

Cell Name: BDI001 Descrip: D bar bending diagram for curb with Type T railing



<u>D</u> BAR

Cell Name: BRGINT Descrip: Bearing detail for integral abutment with steel beams



ELEVATION AT ABUTMENT

SECTION A-A

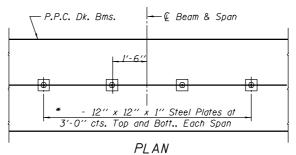
Notes:

Anchor bolts at fixed bearings may be built into the masonry.

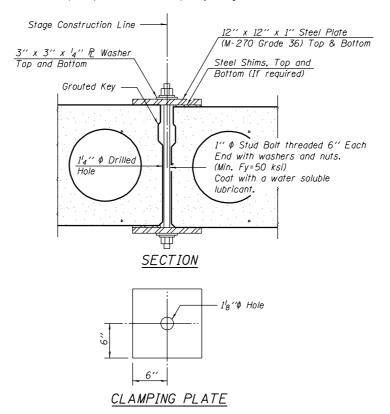
See sheet for Anchor Bolt installation.

FIXED BEARING

Cell Name: CLAMP Descrip: Shear key clamping details at stage construction joint

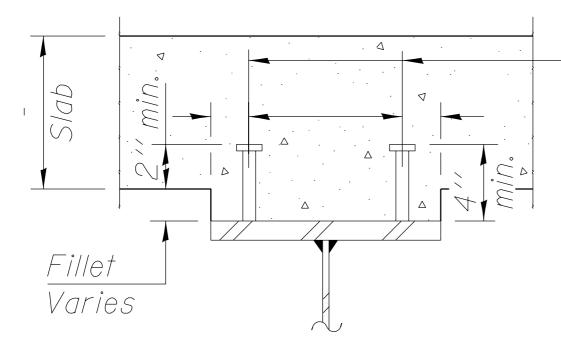


\* Space plates to miss Temporary Bridge Rail Posts.



### SHEAR KEY CLAMPING DETAILS AT STAGE CONST. JT.

See Special Provisions for Stage Construction of Precast Prestressed Concrete Deck Beams. Cost included with "Precast Prestressed Concrete Deck Beams". See Stage Construction Details for traffic lanes. Cell Name: CONN Descrip: Stud shear connector details



3<sub>4</sub>'' \$ Granular or solid flux

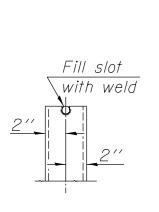
filled headed studs, automatically
end welded to flange.

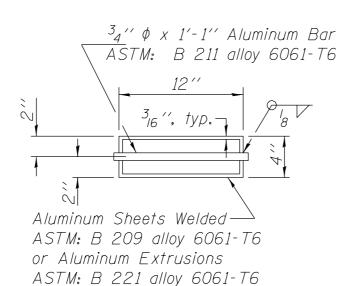
( Req'd.)

SECTION A-A

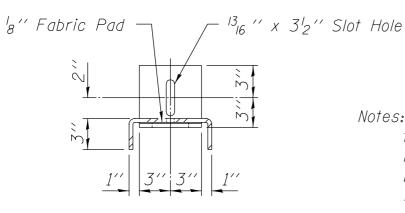
Cell Name: D4X12

Descrip: 4 in x 12 in drain details

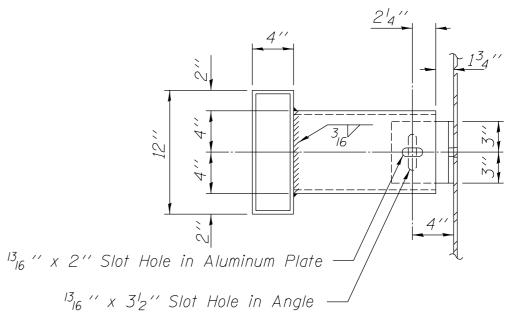




## TOP PLAN



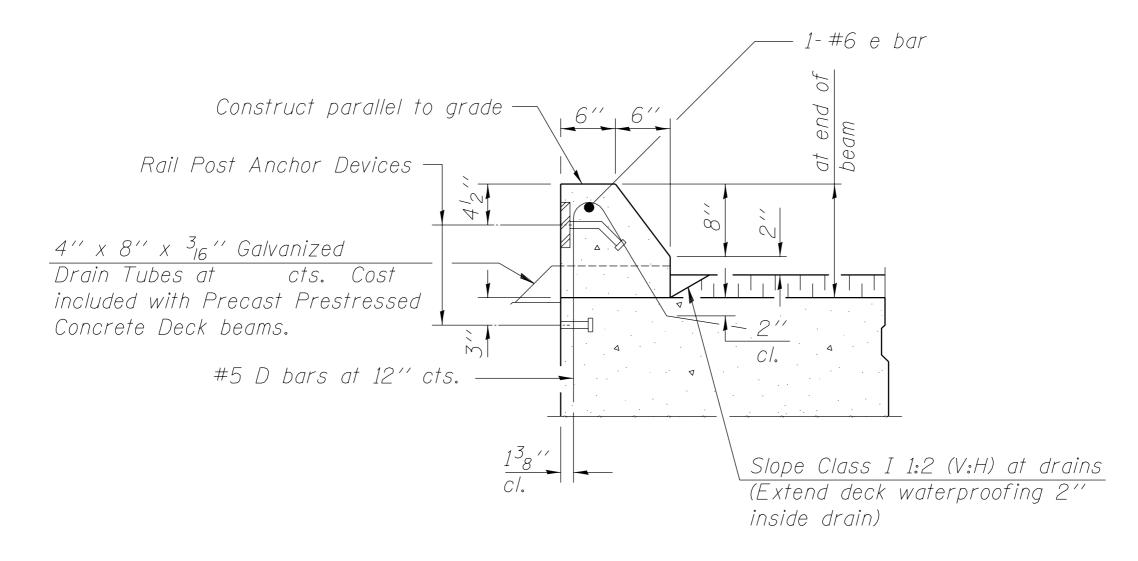
SECTION B-B



## SECTION A-A

Notes: The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drain shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC Paint 27 prior to painting.

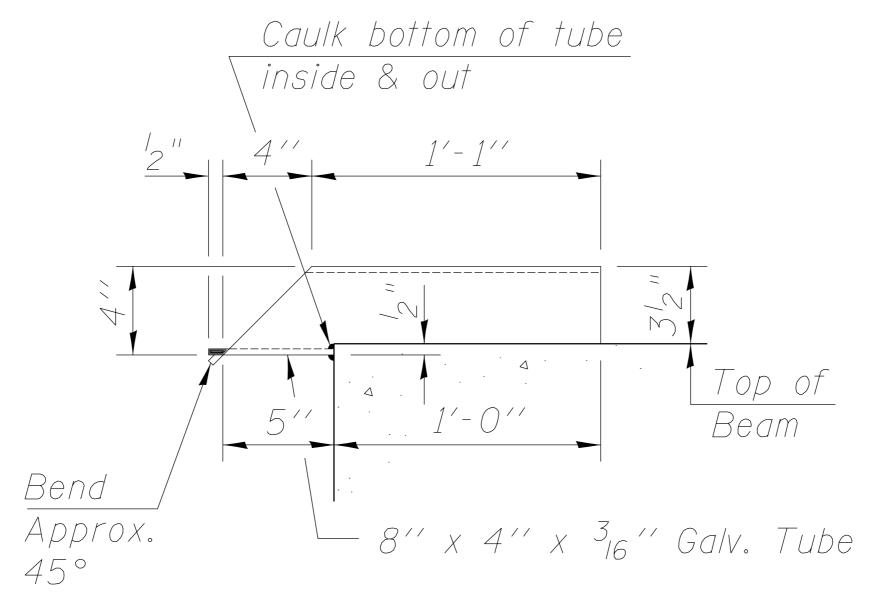
Cell Name: DDIO04 Descrip: Curb section for deck beams with Type T railing



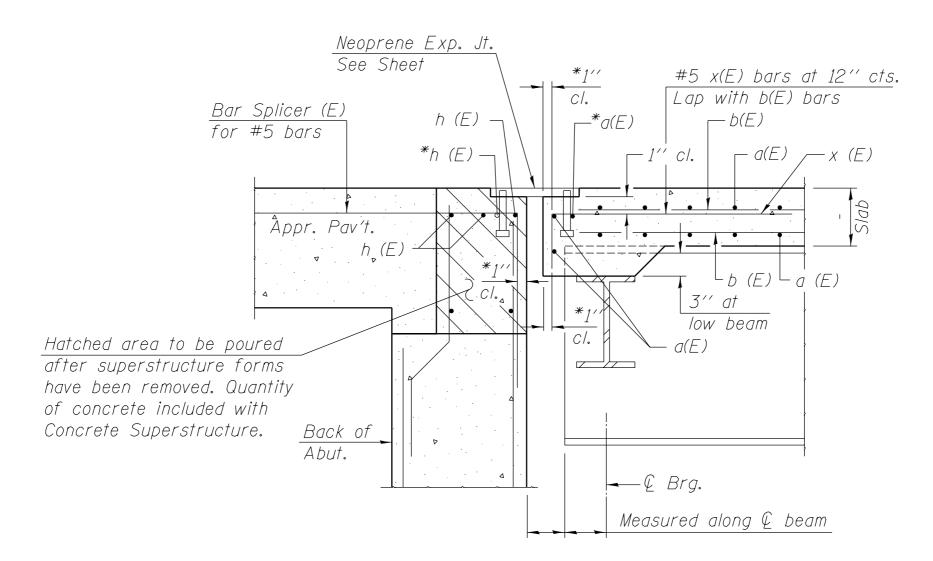
# SECTION THRU CURB

Curbs shall be poured in the field.

Cell Name: DD1005 Descrip: Drain detail for PPC deck beams



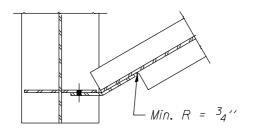
DRAIN DETAIL



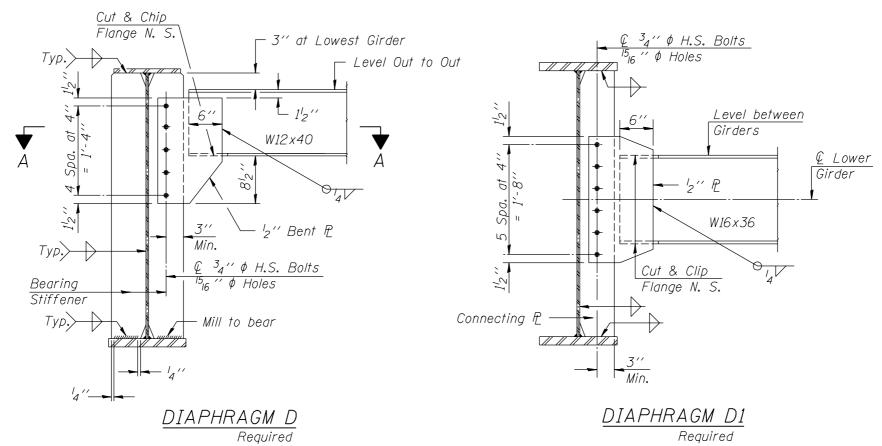
# SECTION A-A

\* Place a(E) and h (E) bars in back of anchor bolt as shown if required to maintain 1" cl.  $(+0-\frac{1}{8}")$ . Anchor bolts should be tied to a(E) and h (E) bars.

Cell Name: DIAPH Descrip: Diaphragm details for girders < 48"



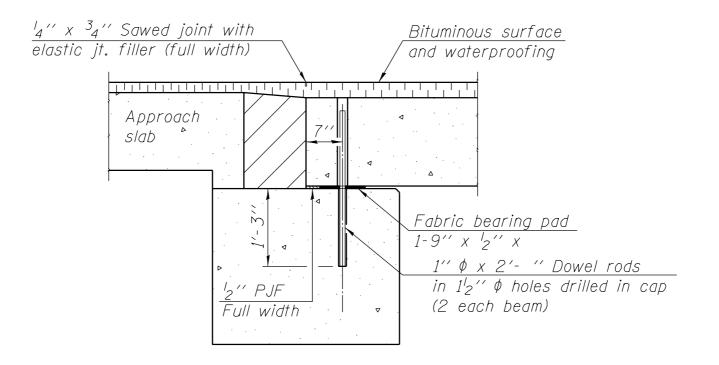
## SECTION A-A



Note:

Two hardened washers shall be required over all oversized holes.

Cell Name: DKBMOI Descrip: Section thru fixed abutment for II" or 17" PPC deck beams with bit surface and waterproofing



## SECTION THRU ABUTMENT

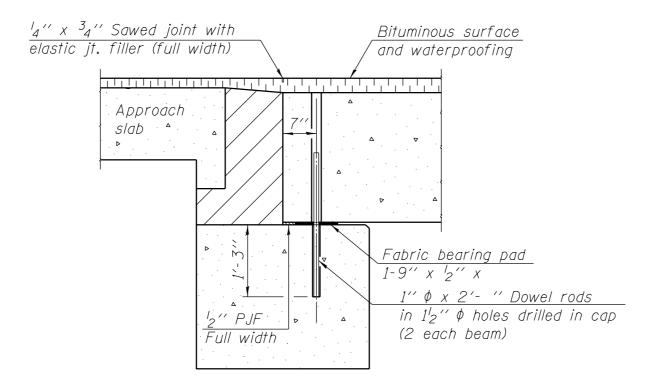
### *Notes* :

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place.

See sheet - of - for bearing pad details.

Cell Name: DKBM02 Descrip: Section thru fixed abutment for 21" thru 33" PPC deck beams with bit surface and waterproofing



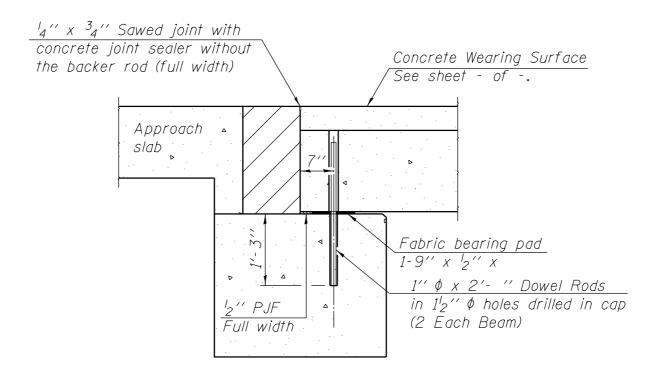
### SECTION THRU ABUTMENT

### *Notes* :

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place.

See sheet - of - for bearing pad details.



### SECTION THRU ABUTMENT

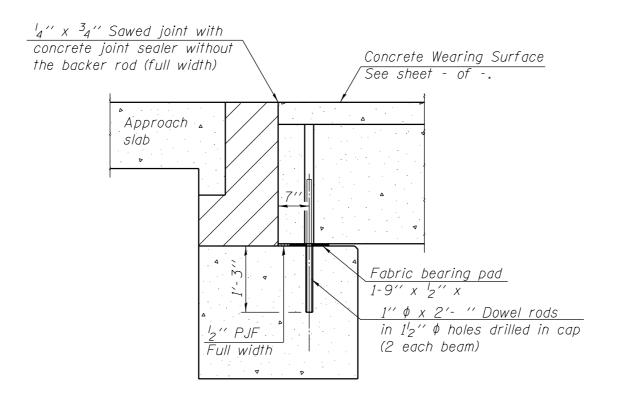
#### *Notes* :

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after concrete wearing surface is in place.

See sheet - of - for bearing pad details.

Cell Name: DKBM04 Descrip: Section thru fixed abutment for 21" thru 33" PPC deck beams with concrete wearing surface



### SECTION THRU ABUTMENT

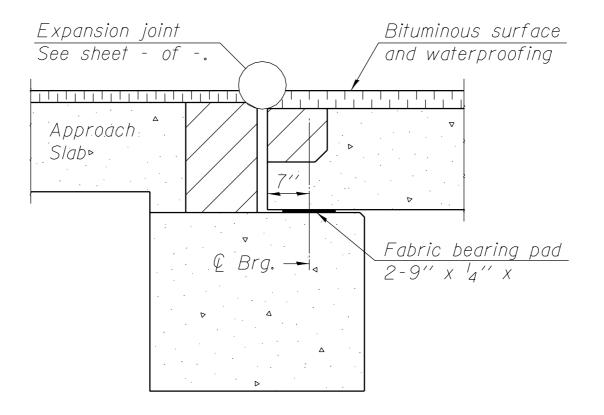
#### *Notes* :

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after concrete wearing surface is in place.

See sheet - of - for bearing pad details.

Cell Name: DKBM05 Descrip: Section thru expansion abutment for 17" PPC deck beams with bit surface and waterproofing

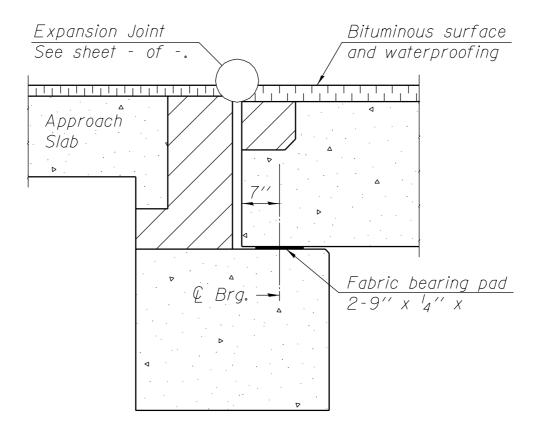


# SECTION THRU ABUTMENT

### *Notes* :

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place. See sheet - of - for bearing pad details.

Cell Name: DKBM06
Descrip: Section thru expansion abutment for 21" thru 33" PPC deck beams with bit surface and waterproofing

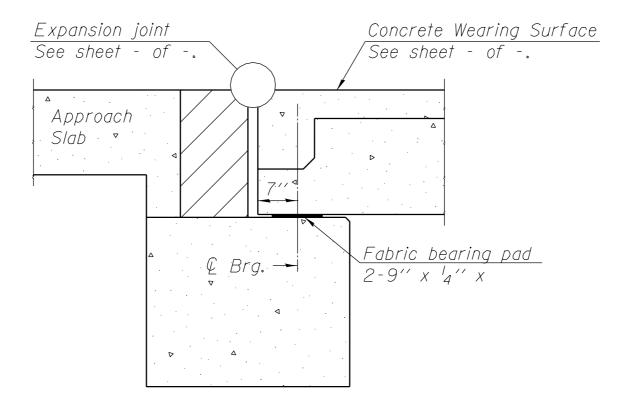


# SECTION THRU ABUTMENT

### *Notes* :

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place. See sheet - of - for bearing pad details.

Cell Name: DKBM07
Descrip: Section thru expansion abutment for 17" PPC deck beams with concrete wearing surface



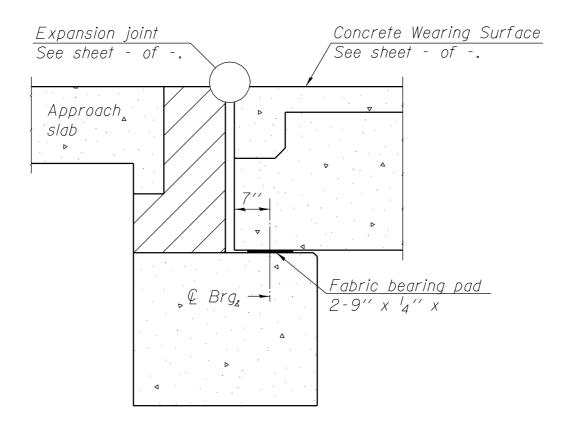
# SECTION THRU ABUTMENT

### *Notes* :

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after concrete wearing surface is in place.

See sheet - of - for bearing pad details.

Cell Name: DKBM08
Descrip: Section thru expansion abutment for 21" thru 33" PPC deck beams with concrete wearing surface



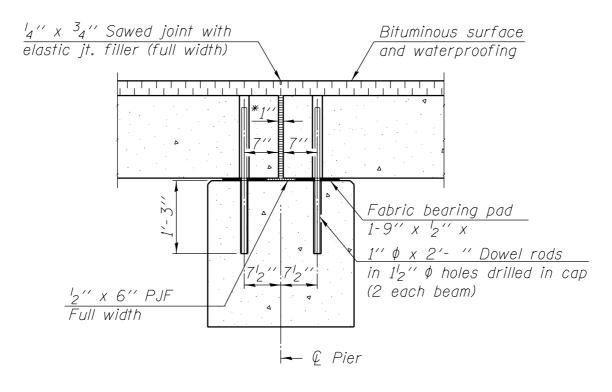
### SECTION THRU ABUTMENT

#### *Notes* :

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after concrete wearing surface is in place.

See sheet - of - for bearing pad details.

Cell Name: DKBM09
Descrip: Section thru fixed pier with bituminous surface and waterproofing



## SECTION THRU FIXED PIER

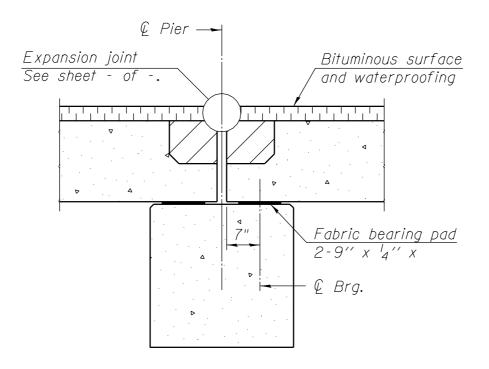
\*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

#### *Notes*:

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place. See sheet - of - for bearing pad details.

Cell Name: DKBMIO Descrip: Section thru expansion pier with bituminous surface and waterproofing

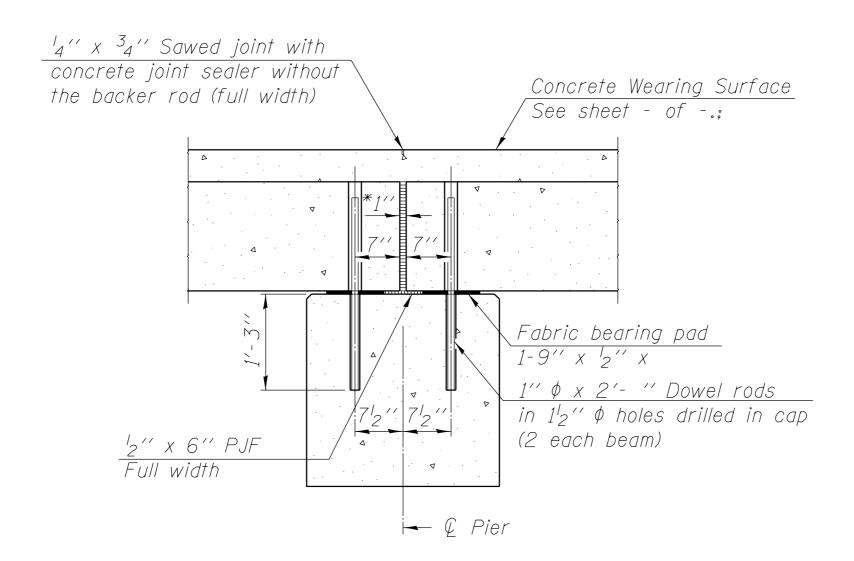


## SECTION THRU EXPANSION PIER

#### *Notes*:

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

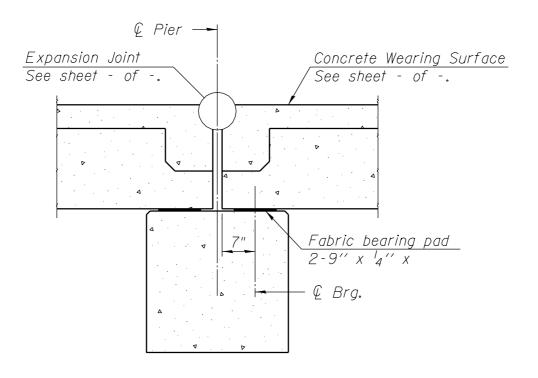
All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place. See sheet - of - for bearing pad details.



# SECTION THRU FIXED PIER

\* 1" It. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

Cell Name: DKBM12 Descrip: Section thru expansion pier with concrete wearing surface

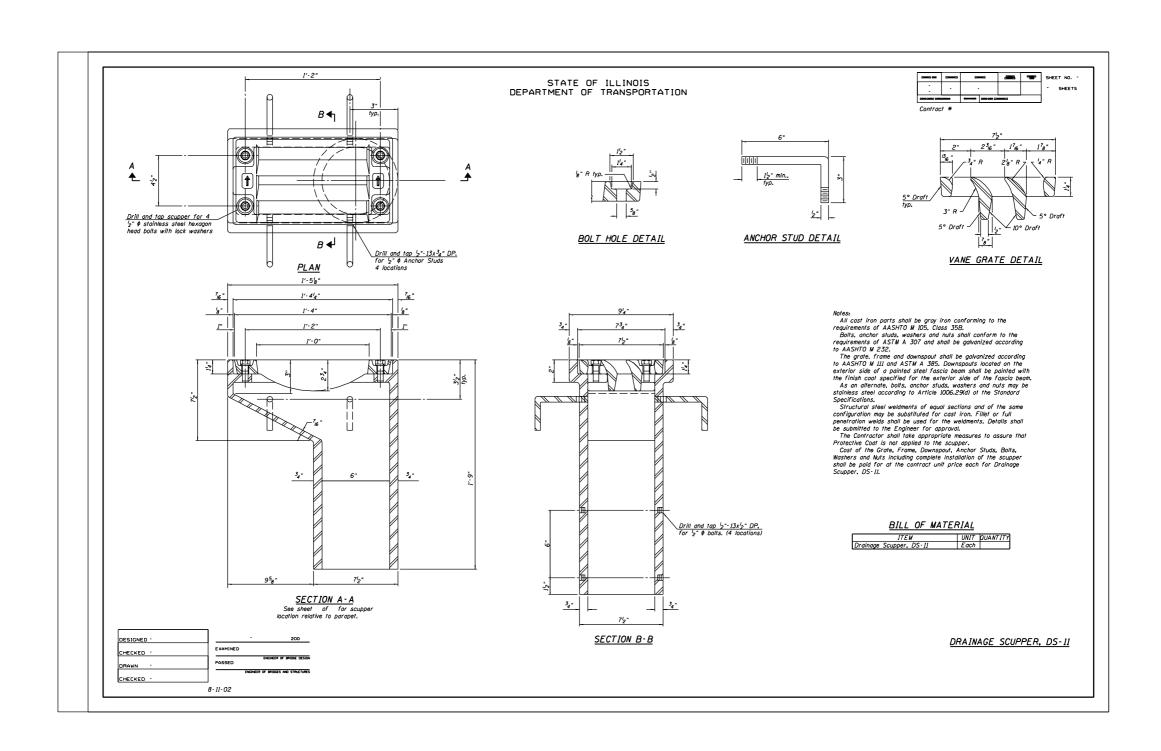


### SECTION THRU EXPANSION PIER

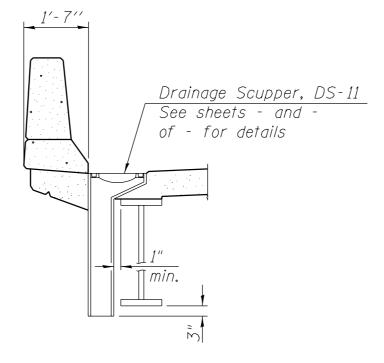
#### *Notes*:

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

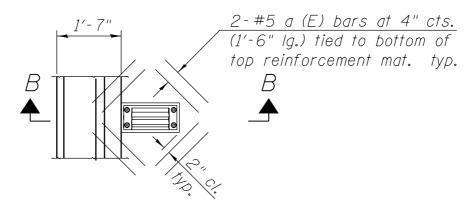
All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place. See sheet - of - for bearing pad details.



Cell Name: DSIIL Descrip: Drainage Scupper, DS-II details, left drain

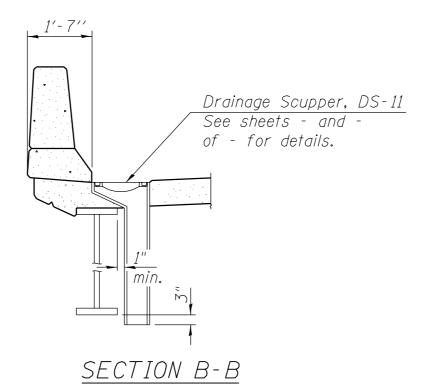


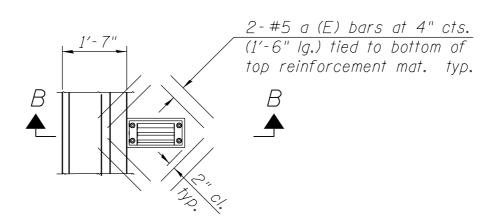
SECTION B-B



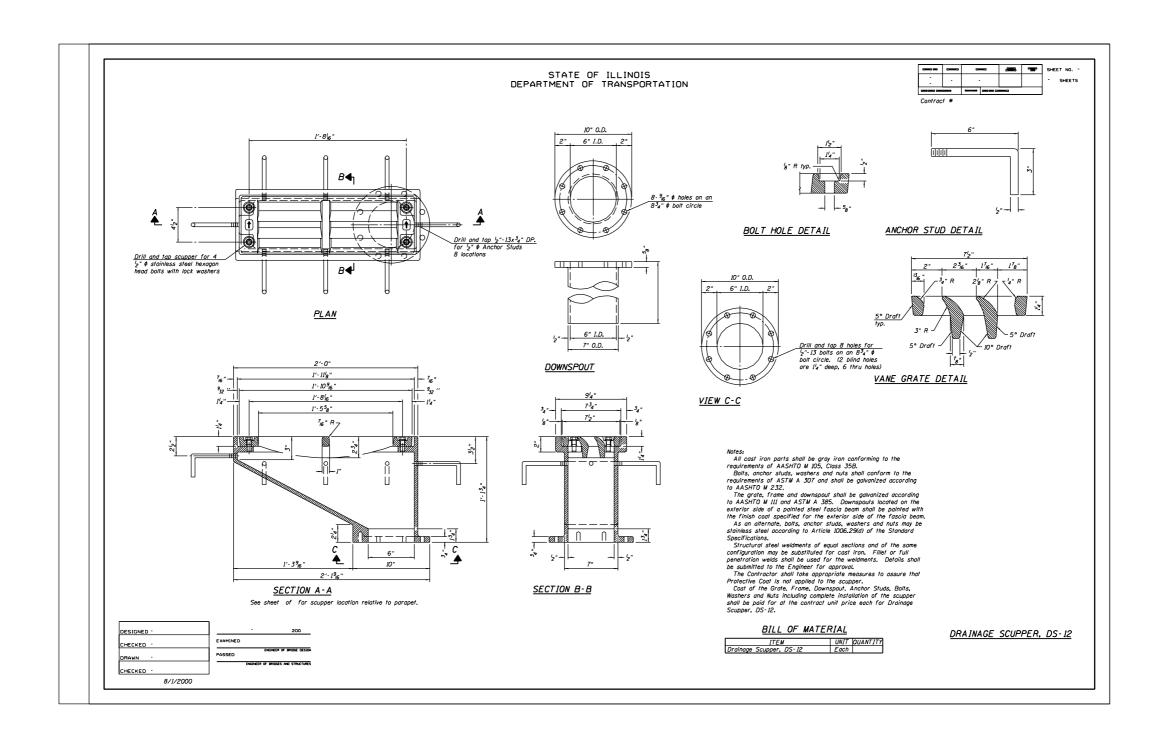
<u>PLAN</u>

Cell Name: DSIIR Descrip: Drainage Scupper, DS-II details, right drain

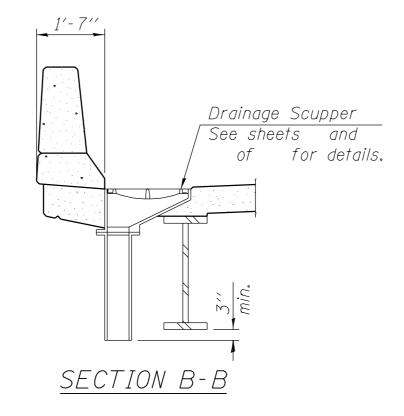


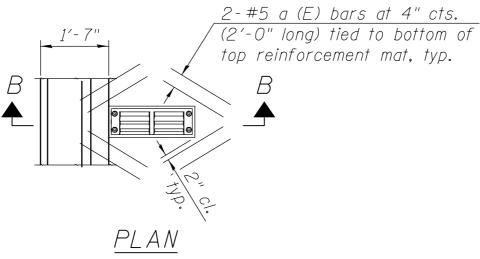


PLAN

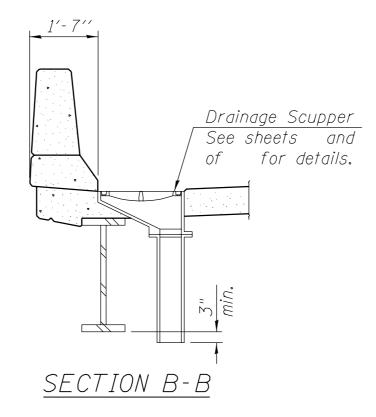


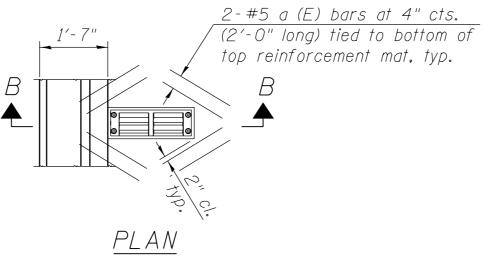
Cell Name: DSI2L Descrip: Drainage Scupper, DS-I2 details, left drain

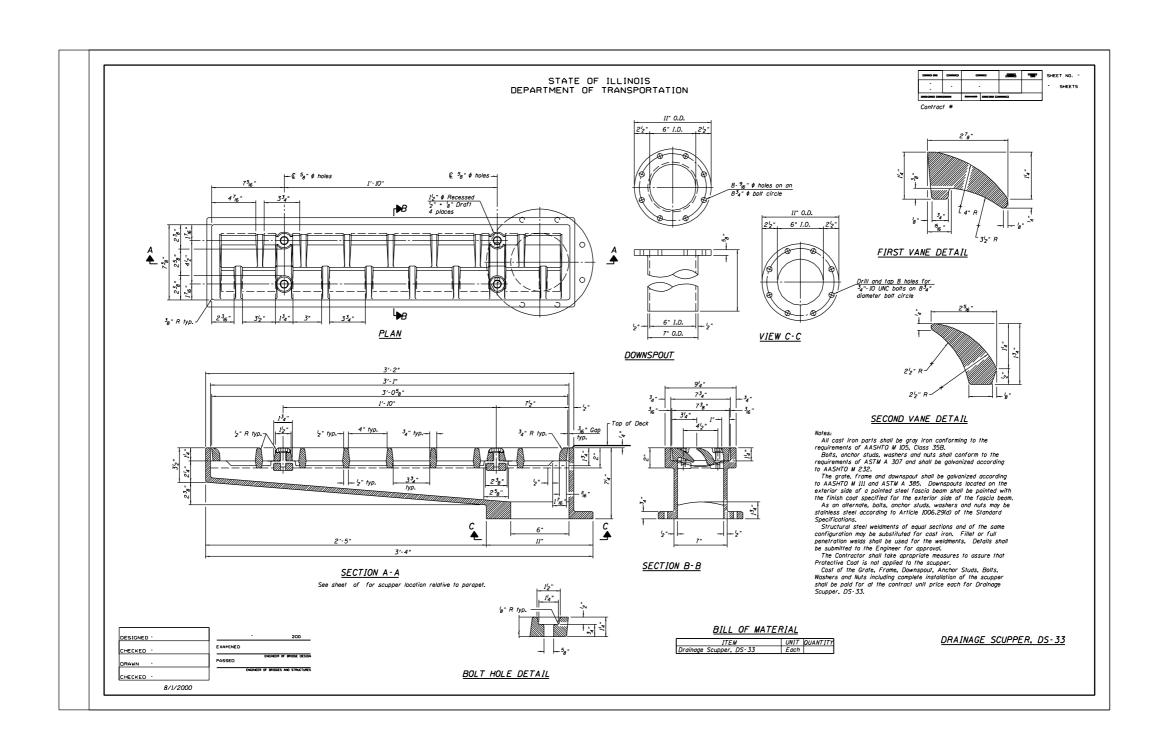




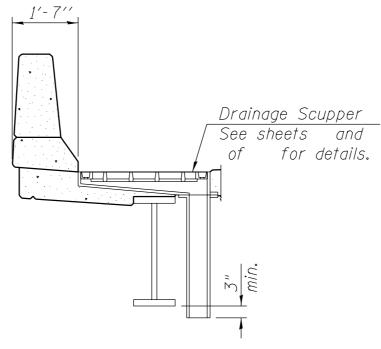
Cell Name: DSI2R Descrip: Drainage Scupper, DS-I2 details, right drain



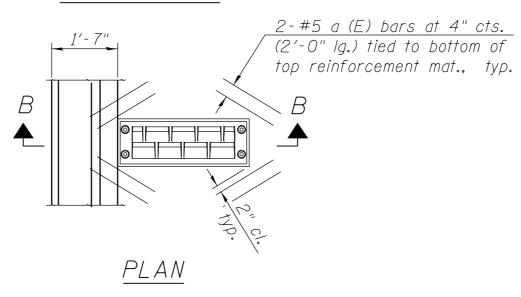


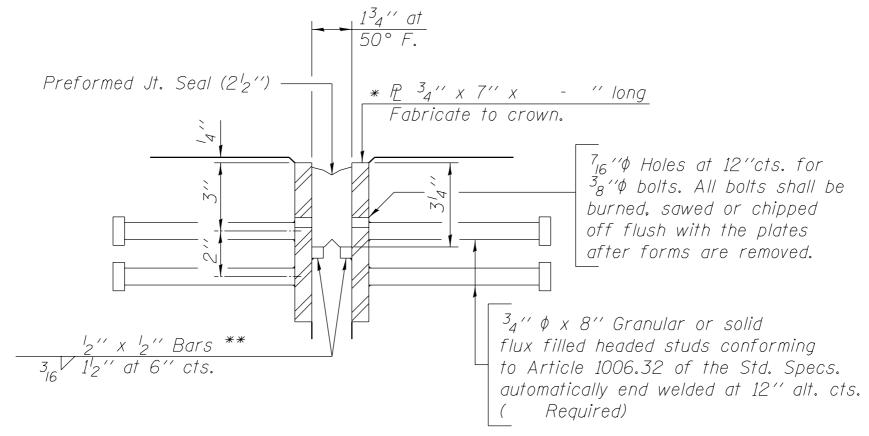


Cell Name: DS33R Descrip: Drainage Scupper, DS-33 details, right drain



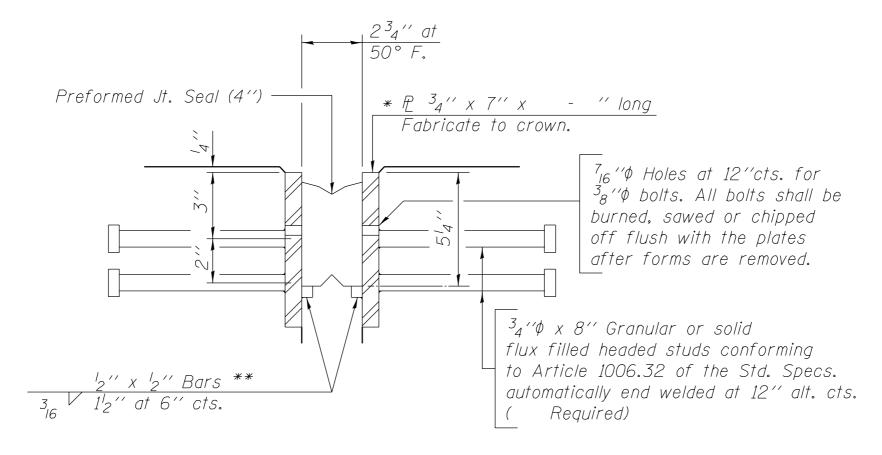
<u>SECTION B-B</u>





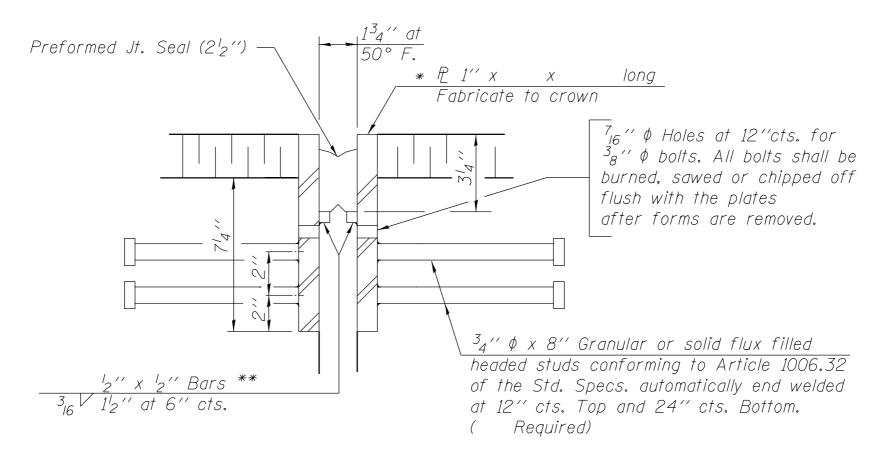
## DETAIL A

- \* Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be <sup>3</sup><sub>16</sub> ". Seal space with Silicone Sealant suitable for Structural Steel.
- \*\* Cut retainer bars in sidewalk or median 6" short of the sidewalk or median face.



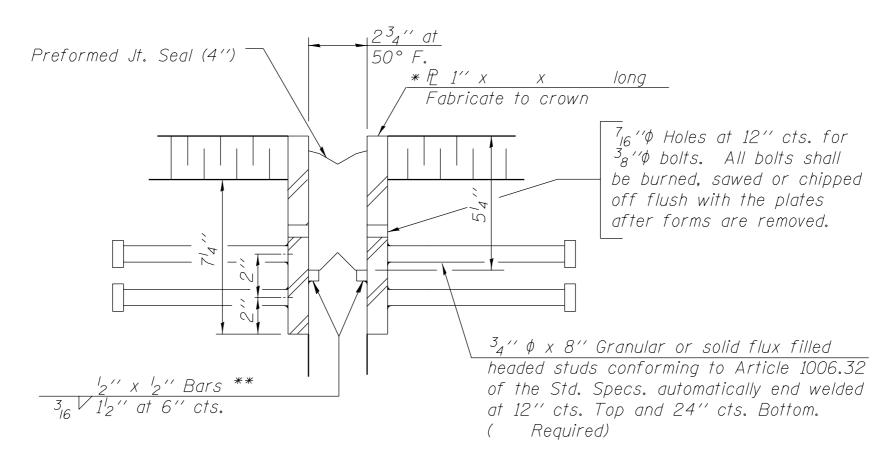
## DETAIL A

- \* Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be  ${}^3_{l6}$  ". Seal space with Silicone Sealant suitable for Structural Steel.
- \*\* Cut retainer bars in sidewalk or median 6" short of the sidewalk or median face.



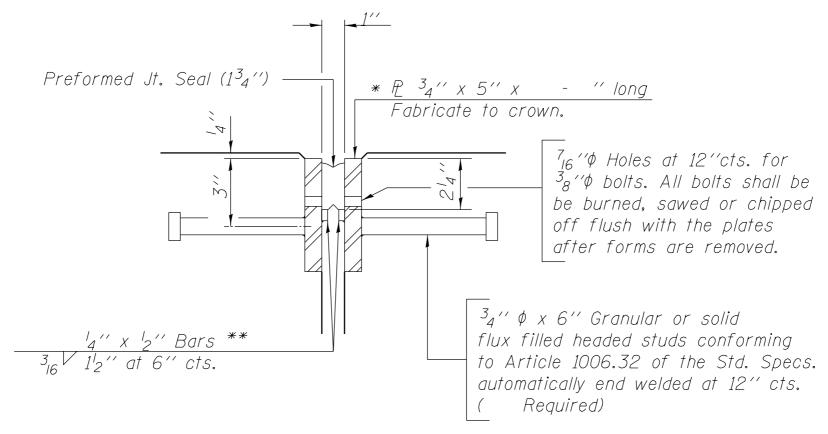
## DETAIL A

- \* Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be  ${}^{3}_{16}$  ". Seal space with Silicone Sealant suitable for Structural Steel.
- \*\* Cut retainer bars in sidewalk or median 6" short of the sidewalk or median face.



## DETAIL A

- \* Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be  ${}^3_{16}$  ". Seal space with Silicone Sealant suitable for Structural Steel.
- \*\* Cut retainer bars in sidewalk or median 6" short of the sidewalk or median face.



## DETAIL A

- \* Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be  ${}^3_{l6}$  ". Seal space with Silicone Sealant suitable for Structural Steel.
- \*\* Cut retainer bars in sidewalk or median 6" short of the sidewalk or median face.

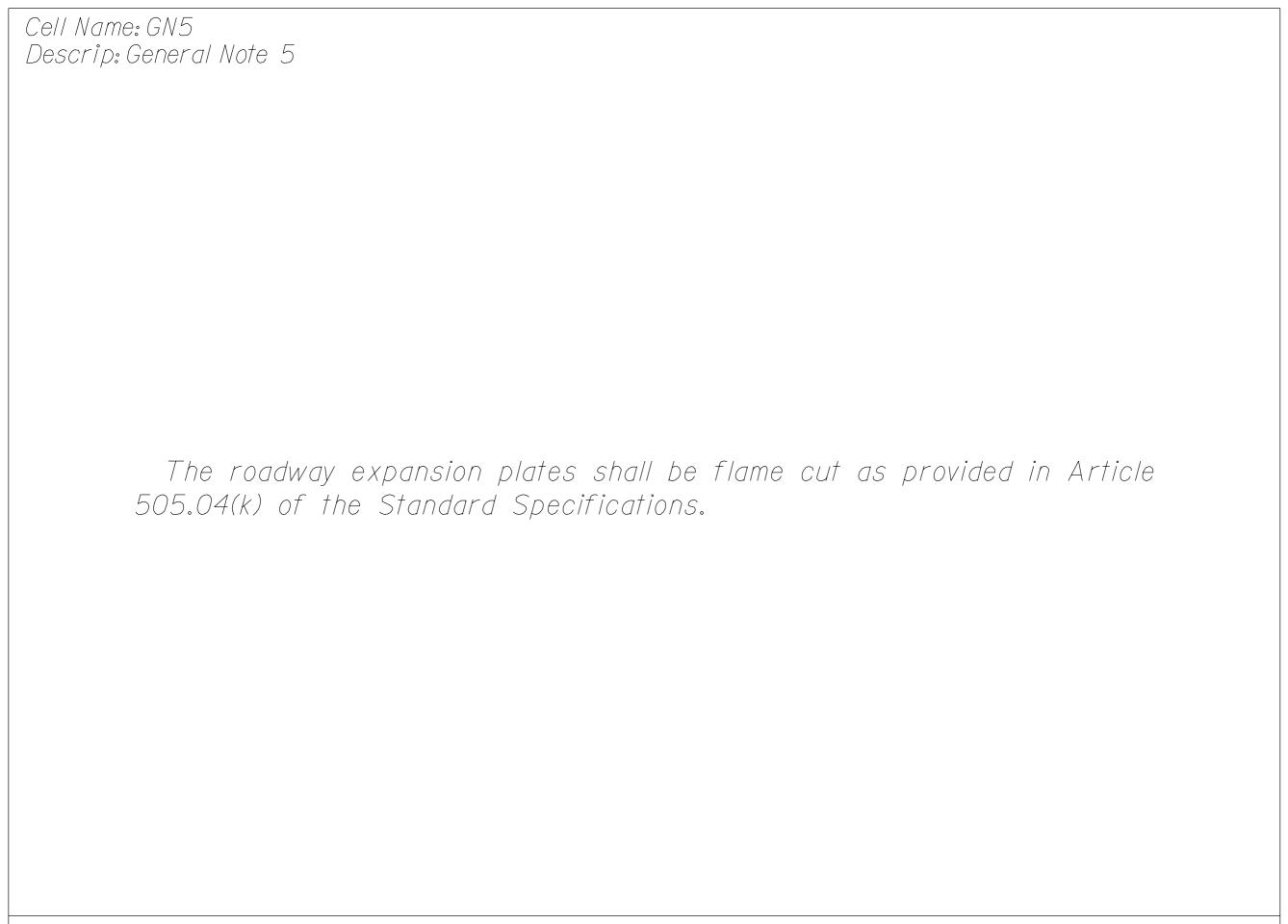
Cell Name: GNI Descrip: General note I

Fasteners shall be high strength bolts (AASHTO M 164, Type 3 in unpainted areas and mechanically galvanized AASHTO M 164, Type 1 or 2 in painted areas). Bolts  $\phi$ , open holes  $\phi$ , unless otherwise noted.

Cell Name: GN2 Descrip: General Note 2 Calculated weight of Structural Steel = Cell Name: GN3 Descrip: General note 3

Cast steel shall be Class . Structural steel weldments of equal sections and meeting AASHTO M may be substituted for castings at the option of the Contractor, subject to approval by the Engineer prior to fabrication. No additional Compensation will be allowed the Contractor for this substitution.





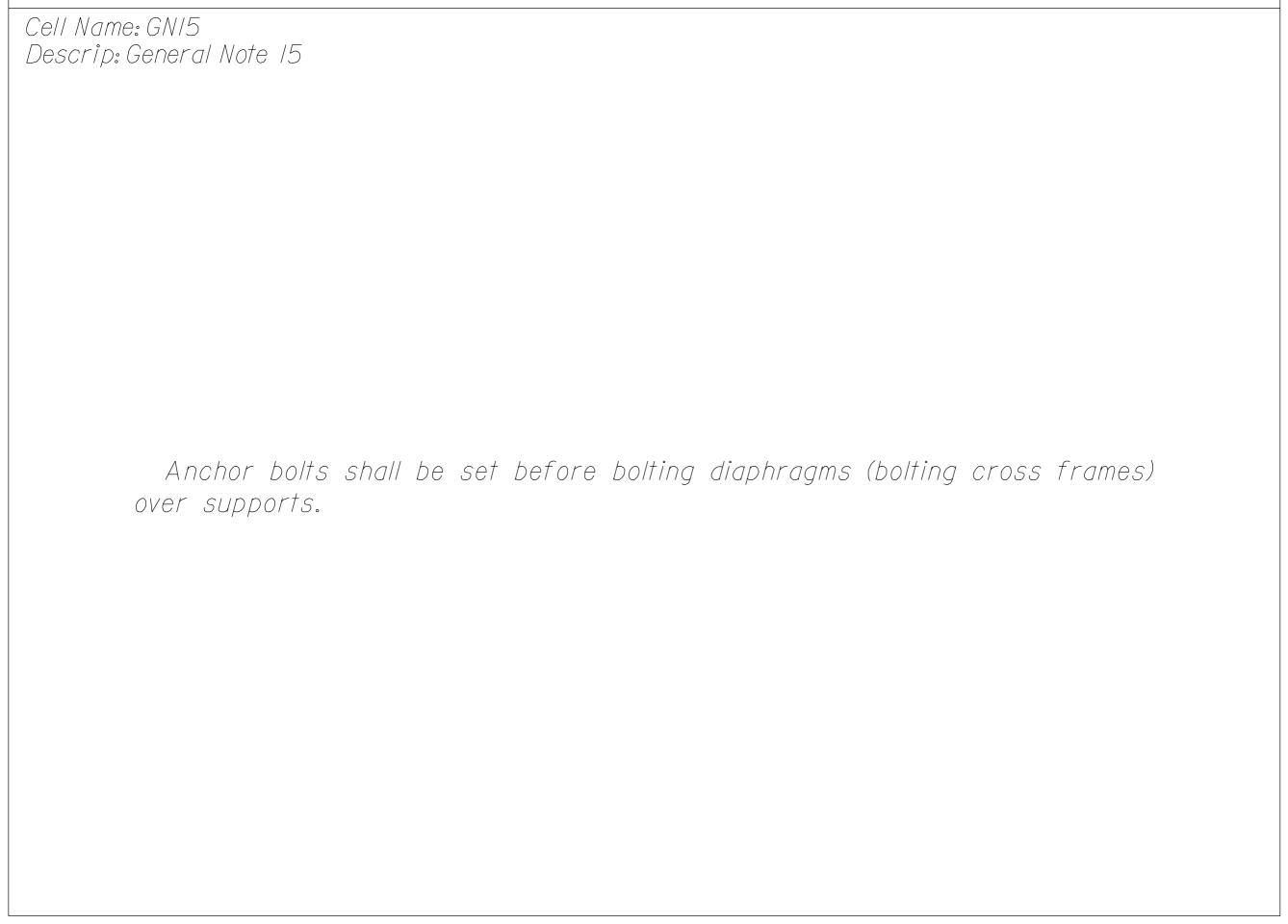
Cell Name: GN6 Descrip: General Note 6

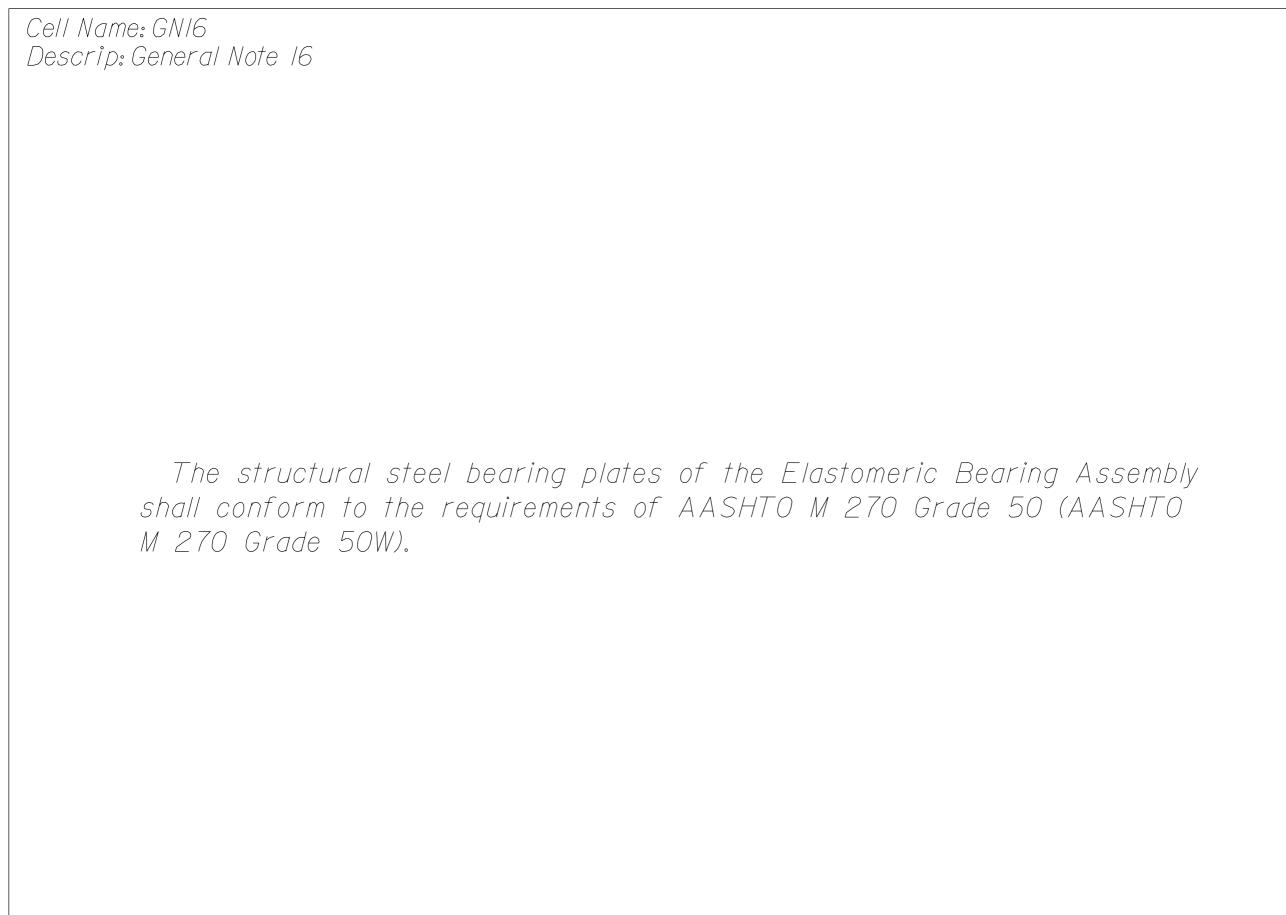
Expansion guards which are not cast in the precast unit shall be fabricated and erected according to Article 503.10(c) of the Standard Specifications and are included in quantity of structural steel.





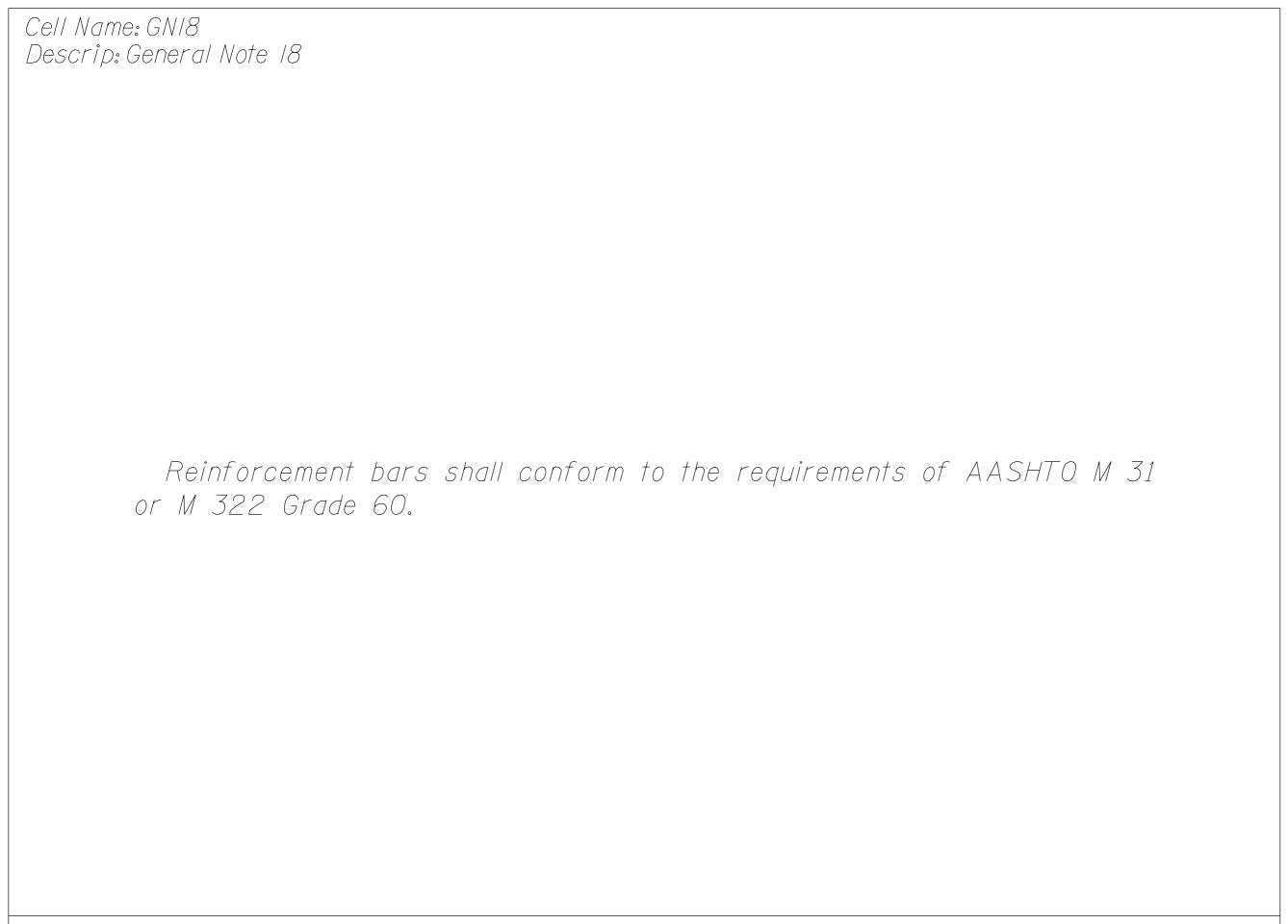
Cell Name: Descrip: G	:GN/4 General Note 14						
	Field welding girders.	of construction	accessories	will not be	permitted to	beams or	



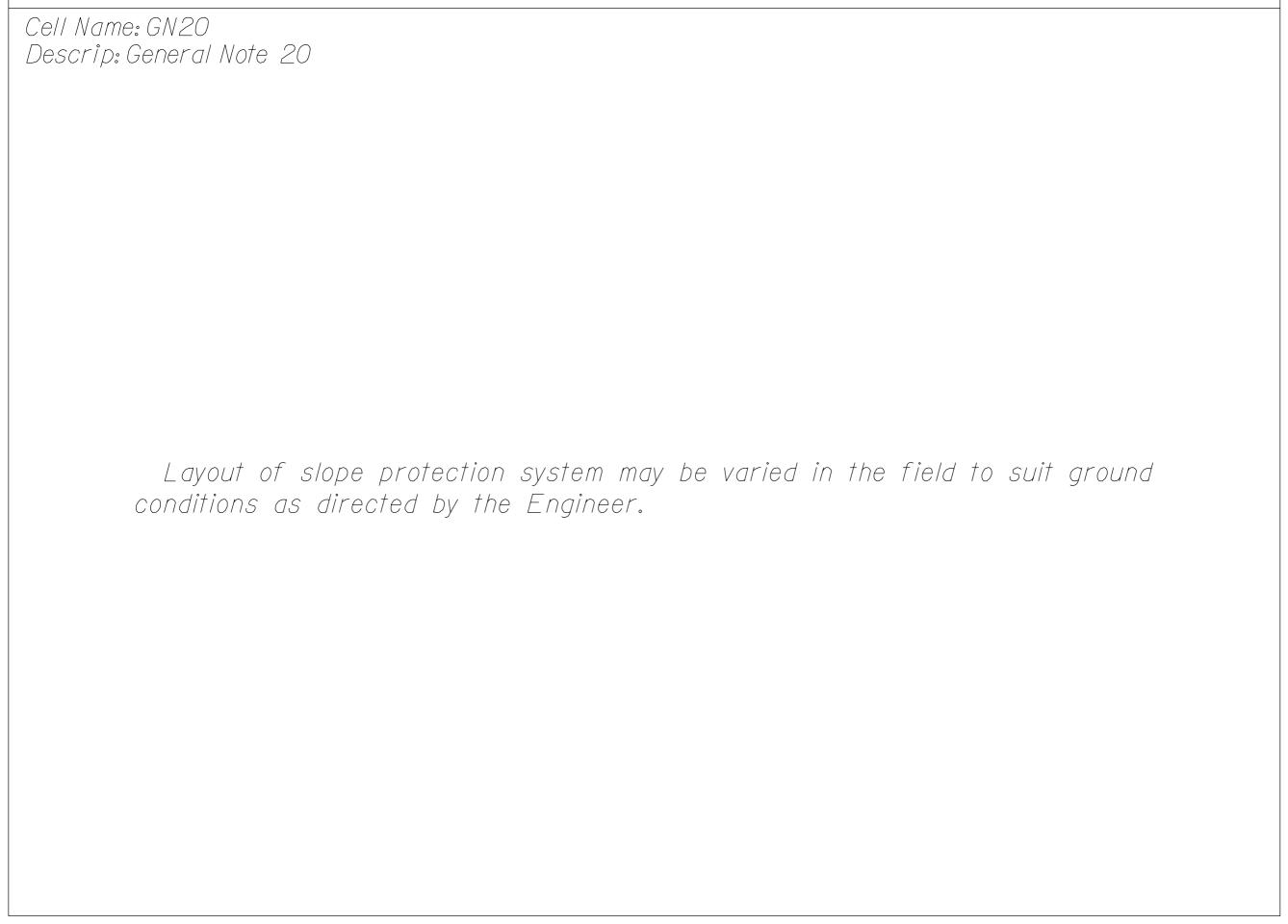


Cell Name: GN17 Descrip: General Note 17

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are (the wide flange beams) (the tension flanges, webs) and all splice plate material except fill plates.



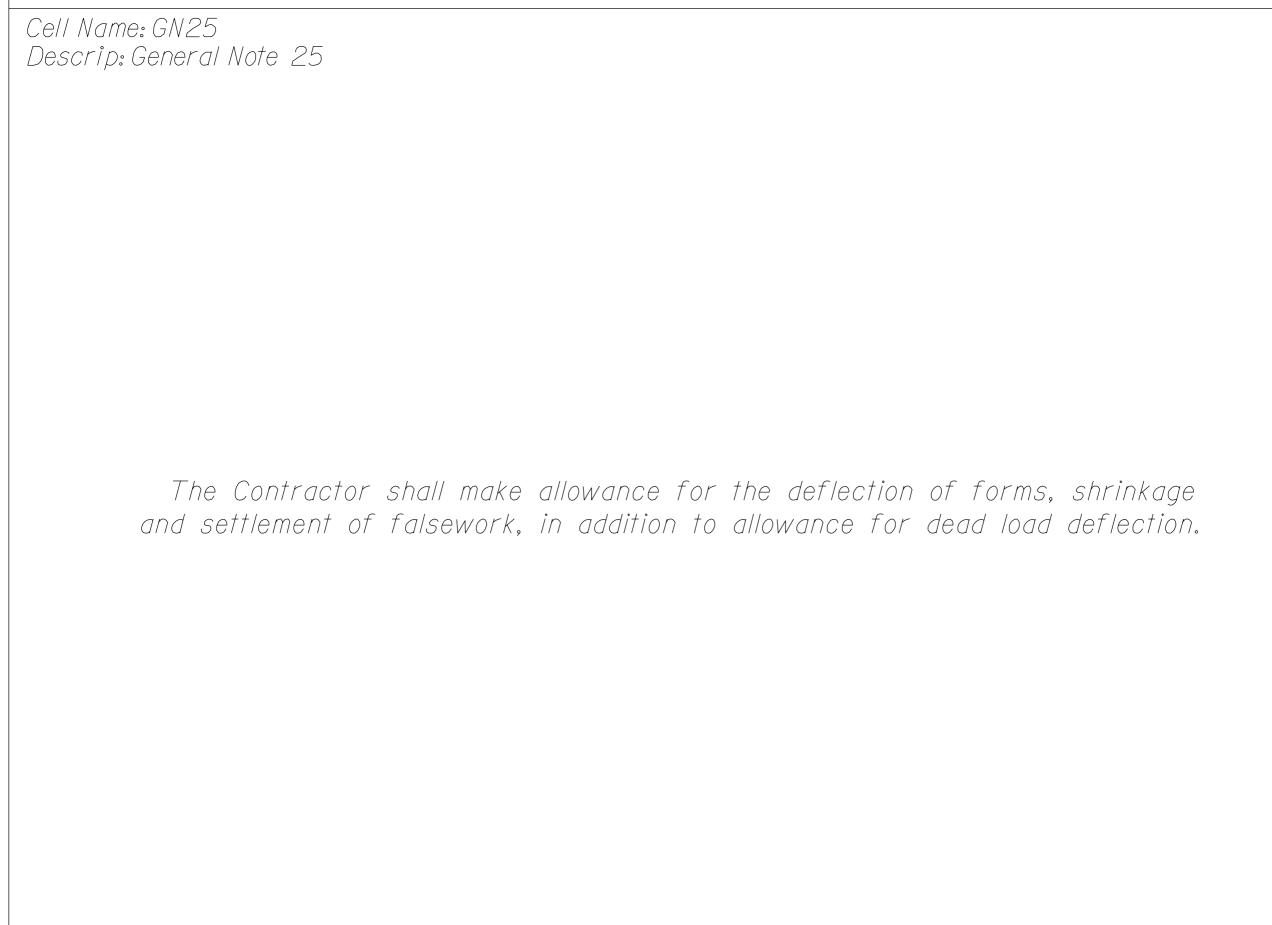
Cell Name: GN19 Descrip: General Note 19 Slope wall shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.





Cell Name: GN23 Descrip: General Note 23 Backfill shall be placed behind the abutment after the superstructure has been poured and the falsework removed. See Article 502.10 of the Standard Specifications.



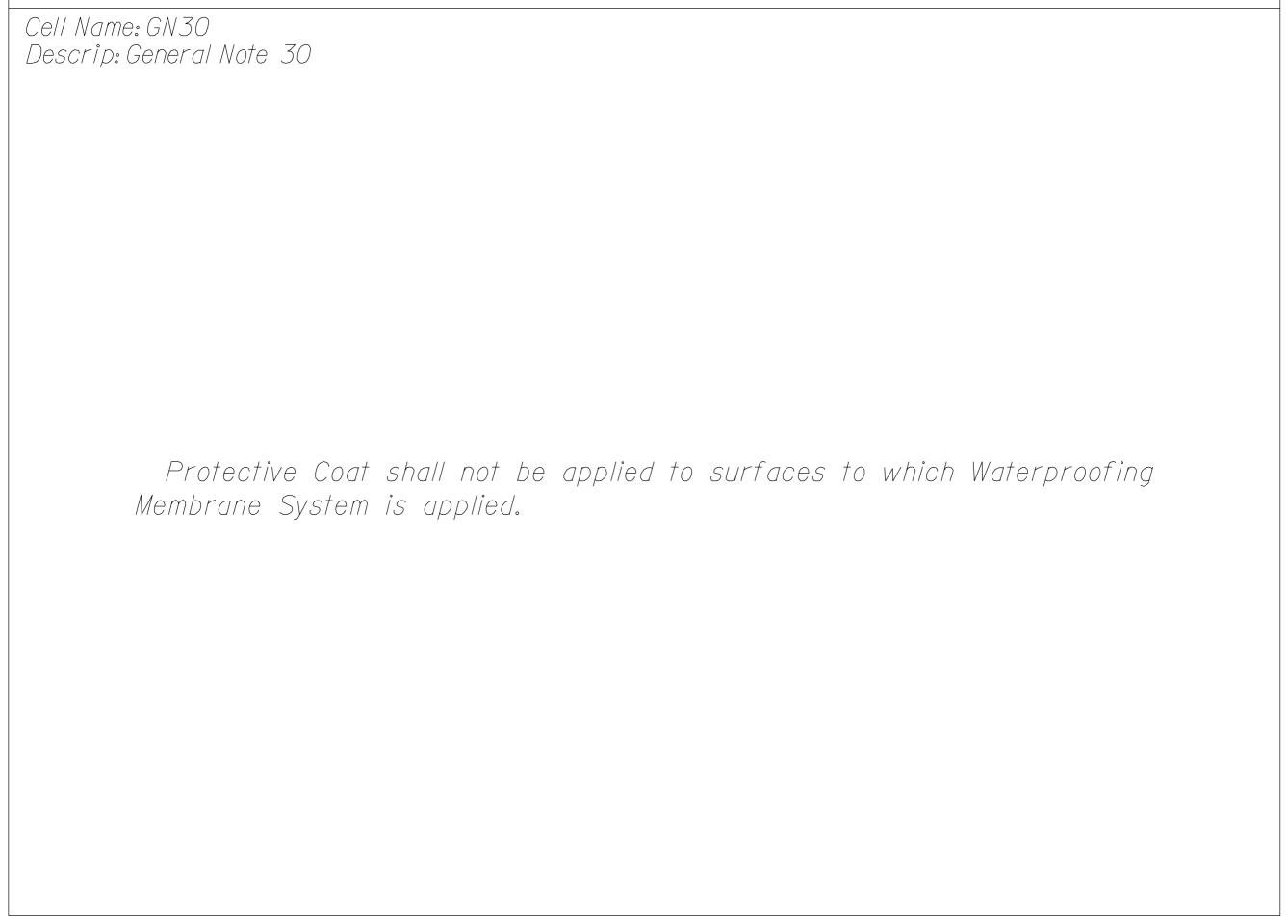


Cell Name: GN26 Descrip: General Note 26

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.

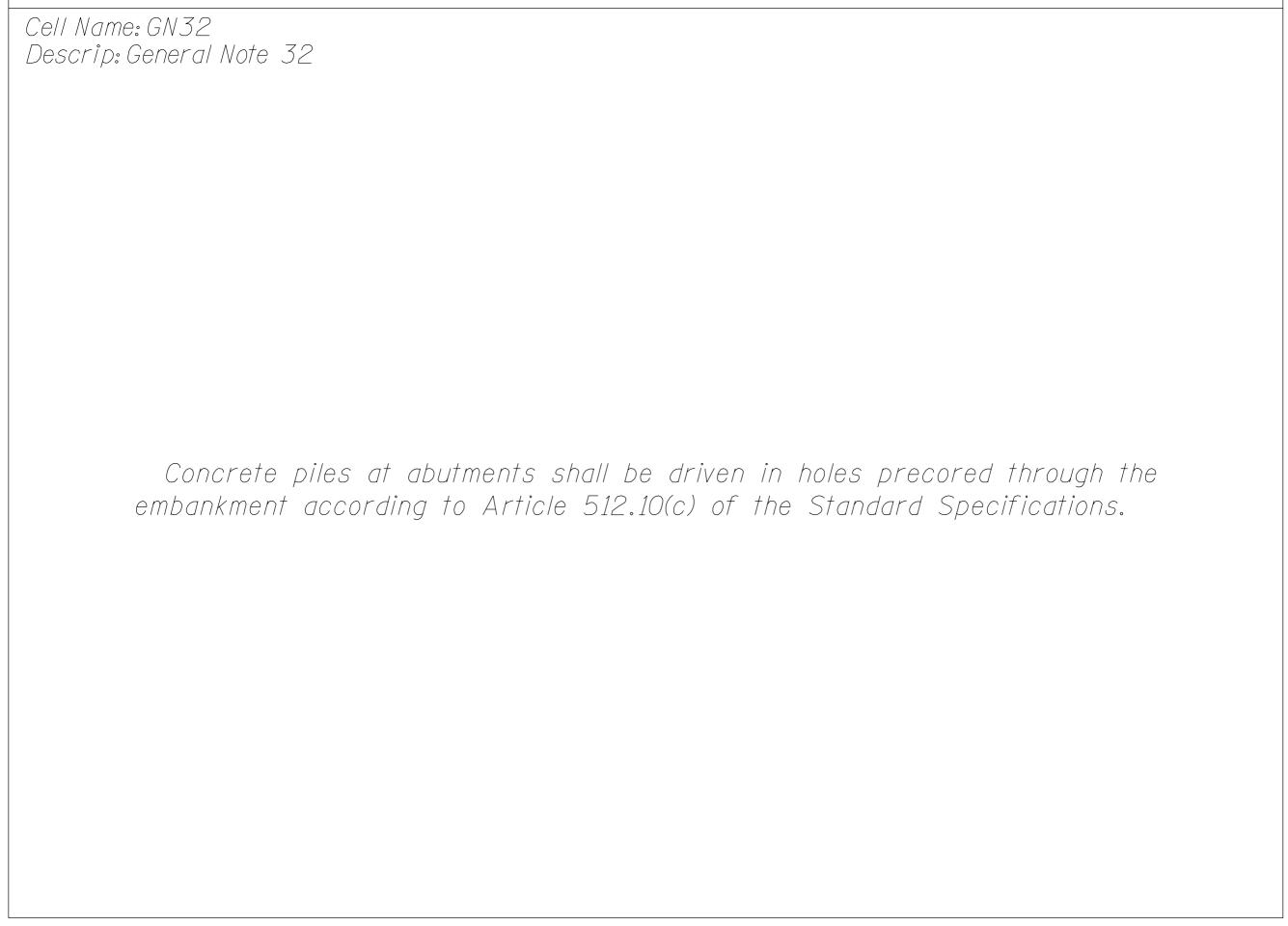
Cell Name: GN28 Descrip: General Note 28

The top surface of the beams shall be finished according to Article 504.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of  $\frac{1}{4}$ '.



Cell Name: GN31 Descrip: General Note 31

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $^{l}_{8}$  inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two  $^{l}_{8}$ ' adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type I Elastomeric Bearings, two  $^{l}_{8}$ ' adjusting shims shall be provided for each bearing and placed as detailed).



Cell Name: GN33 Descrip: General Note 33

The Contractor shall drive test piles in a permanent location at as directed by the Engineer before ordering the remainder of piles.

Cell Name: GN34 Descrip: General Note 34

The concrete for bridge floors finished according to Article 503.17 of the Standard Specifications, shall be placed and compacted parallel to the skew in uniform increments along centerline of bridge. The finishing machine, when required, shall be set parallel to the skew for striking off and screeding the concrete.

Cell Name: GN36 Descrip: General Note 36

Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

All existing construction accessories welded to the top flange over the pier between the quarter points of the beams or girders shall be removed. The remaining weld shall be ground smooth and inspected for cracks using magnetic particle testing. Any cracks that can not be removed by grinding approximately inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of this work will be paid for according to Article 109.04.

Cell Name: GN37 Descrip: General Note 37 Bridge Seat Sealer shall be applied to the seat area of the Cell Name: GN38 Descrip: General Note 38

When the deck pour is stopped for the day at one or more of the transverse Bonded Construction Joints in the deck Pouring Sequence as shown, the next pour shall not be made until both of the following requirements are met:

- 1. At least 72 hours shall have elapsed from the end of the previous pour.
- 2. The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

Cell Name: GN39 Descrip: General Note 39

In addition to all other requirements of section 512 of the Standard Specifications, splices for piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the Contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.



Cell Name: GN41 Descrip: General Note 41

AASHTO M 270 Grade 50W structural steel shall only be painted, at the ends of the beams, for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with an inorganic zinc rich primer per AASHTO M 300, Type 1. No field painting shall be required. All structural steel shall be cleaned as specified in the special provision for "Surface Preparation and Painting Requirements for Weathering Steel".

Cell Name: GN42 Descrip: General Note 42

AASHTO M 270 Grade 50W structural steel shall only be painted, for a distance of three times the depth of the beams or girders (but not exceeding 10 feet) each way from the deck joints. All structural steel shall be cleaned as specified in the special provision for "Surface Preparation and Painting Requirements for Weathering Steel".

Cell Name: GN43 Descrip: General Note 43 All Construction joints shall be bonded. Cell Name: GN44 Descrip: General Note 44 Excavation behind existing abutment walls shall be done before removing the existing superstructure. The Contractor shall sawcut the existing abutments at the stage removal line before stage I removal.

Cell Name: GN45 Descrip: General Note 45

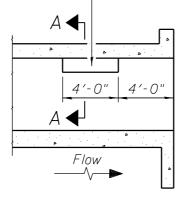
The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR permit number which was issued for the permanent construction.

Cell Name: GN46 Descrip: General Note 46

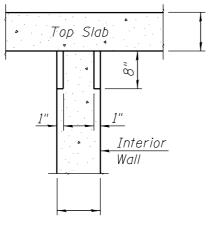
If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06 of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

Cell Name: GP0001 Descrip: Phoebe nesting site

Notch formed by rough finished board attached to and removed with formwork, each interior wall. (Do not chamfer).



 $\frac{\textit{LONGITUDINAL}}{\textit{SECTION}}$ 



SECTION A-A

PHOEBE NESTING

SITE DETAILS
(Downstream End Only)

Cell Name: GP0002 Descrip: Design specifications, stresses and loading

#### HIGHWAY CLASSIFICATION

Rte. - Rte. Functional Class:

ADT: (20 ); (20 ) DHV:

Design Speed: m.p.h.
Posted Speed: m.p.h.

#### LOADING HS20-44

Allow 50#/sq. ft. for future wearing surface.

#### DESIGN SPECIFICATIONS

1996 AASHTO with 1997 thru 2002 Interims

### DESIGN STRESSES

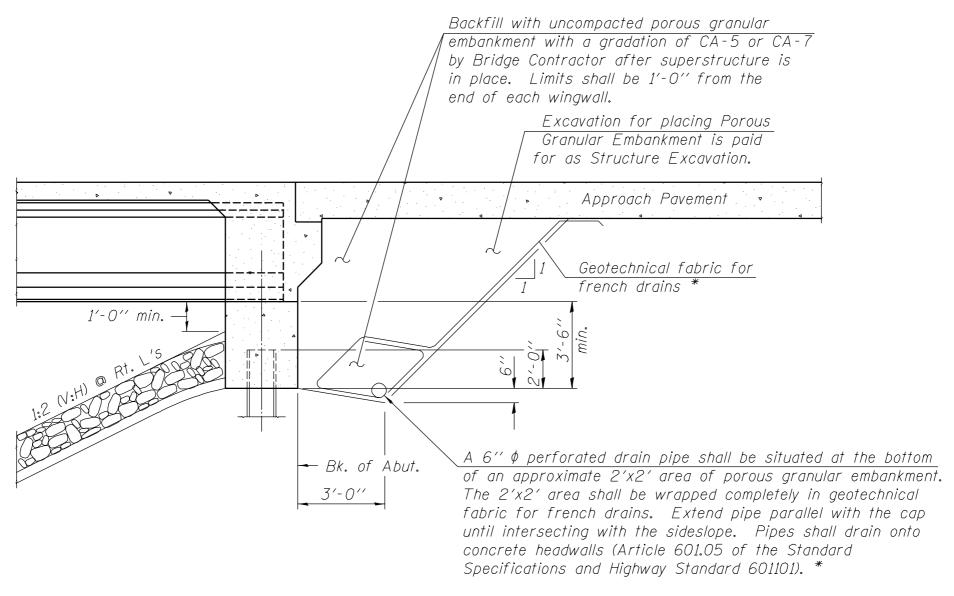
#### FIELD UNITS

f'<sub>c</sub> = 3,500 psi

 $f_y$  = 60,000 psi (reinforcement)  $f_y$  = 36,000 psi (structural steel)

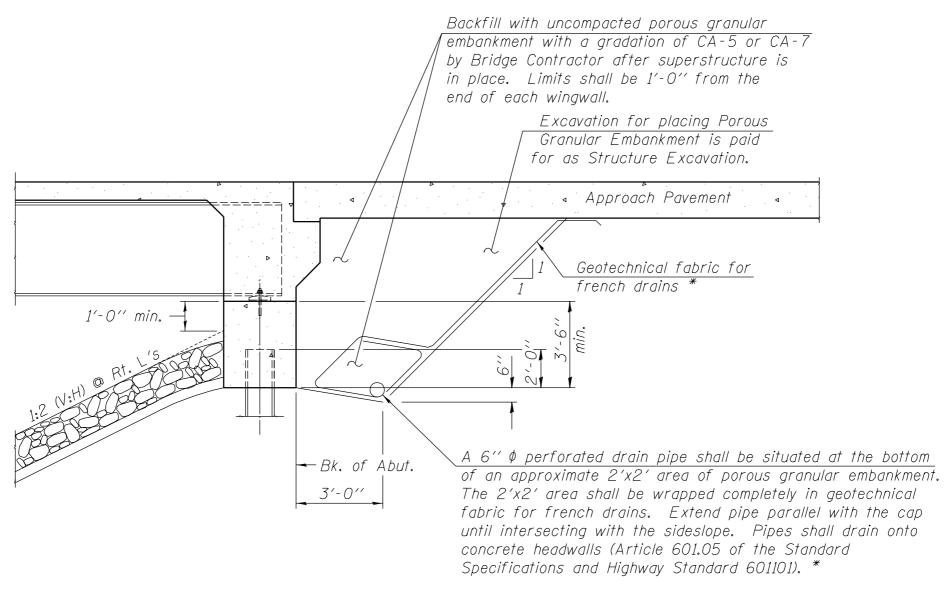
### SEISMIC DATA

Seismic Performance Category (SPC) = Bedrock Acceleration Coefficient (A) = Site Coefficient (S) =



\* Included in the cost of Porous Granular Embankment.

SECTION THRU INTEGRAL ABUTMENT (Horiz. dim. @ Rt. L's)



\* Included in the cost of Porous Granular Embankment.

SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

Cell Name: GP0005 Descrip: Total Bill of Material, 15 line

# TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL

Cell Name: GP0006 Descrip: Total Bill of Material, 20 line

## TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL

Cell Name: GP0007 Descrip: Total Bill of Material, 25 line

## TOTAL BILL OF MATERIAL

<u> </u>				
ITEM	UNIT	SUPER	SUB	TOTAL

Cell Name: GP0008 Descrip: Total Bill of Material, 30 line

TOTAL BILL OF MATERIAL

<u> </u>	TOTAL BILL OF MATTERIAL				
ITEM	UNIT	SUPER	SUB	TOTAL	
				<u> </u>	
				<u> </u>	
				-	
				-	
	L	L	l		

Cell Name: GP0009 Descrip: Name Plate

STATION

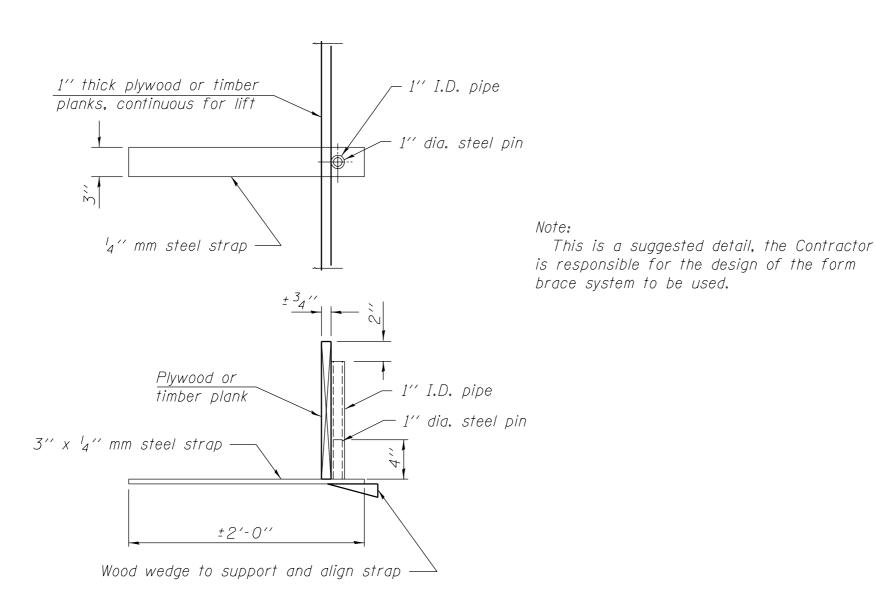
BUILT BY

STATE OF ILLINOIS

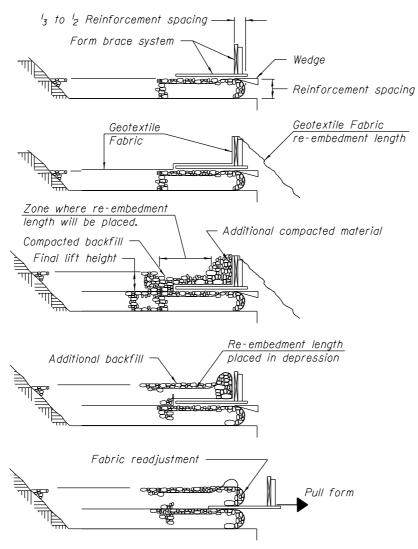
LOADING HS20 STR. NO.

NAME PLATE
See Std. 515001

Cell Name: GTBRAC Descrip: Geotextile Wall Brace



SUGGESTED GEOTEXTILE TEMPORARY
FORM BRACE SYSTEM DETAIL



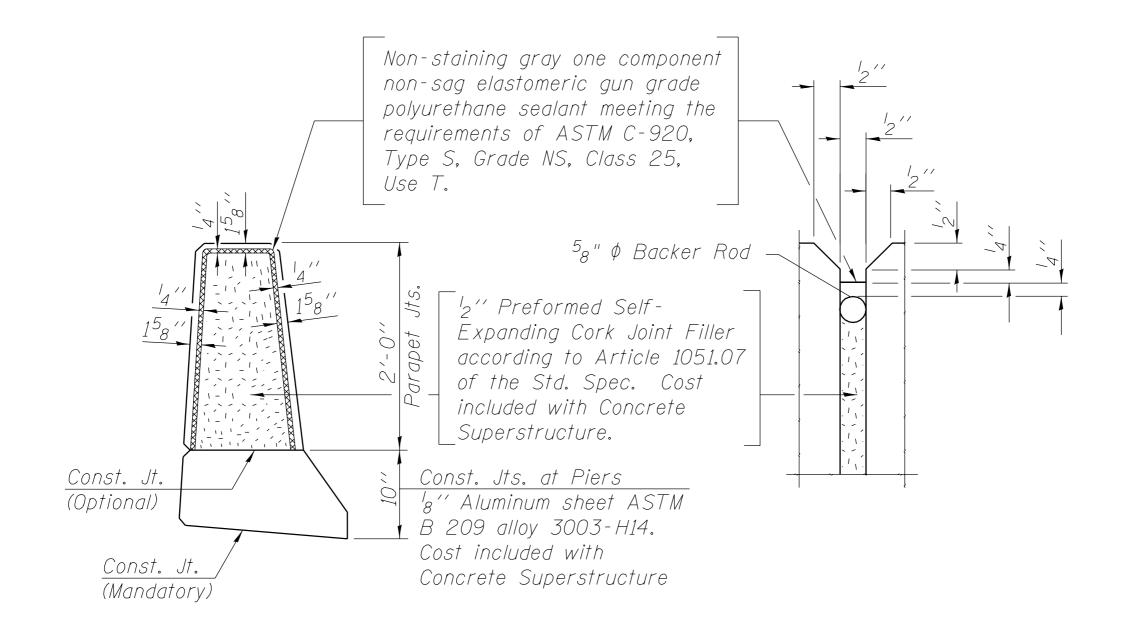
- Place form brace system on completed reinforcement level; back from the finished fabric face a distance of <sup>1</sup><sub>3</sub> to <sup>1</sup><sub>2</sub> the reinforcement spacing.
- 2. Position fabric so that the required re-embedment length extends over the top of the form brace and the design reinforcement width is placed with no slack against the previous level.
- Compact backfill material in lifts to final lift height, create (±3") depression in zone where re-embedment length will be located and place additional height of compacted material against form brace.
- 4. Fold fabric re-embedment length back over form brace into zone where depression was made in backfill and place additional compacted backfill, (±3") to embed fabric and bring to final lift height.
- 5. Pull form brace outward allowing fabric face to slightly readjust to form tight round face and level with plan reinforcement spacing.

#### <u>GEOTEXTILE WALL</u> CONSTRUCTION PROCEDURE

The geotextile fabric shall have a minimum allowable tensile strength (T min.) of Ib./in. as determined by the procedure stated in the Special Provisions. The computations supporting the determination of (T min.) shall be submitted to the engineer for approval.

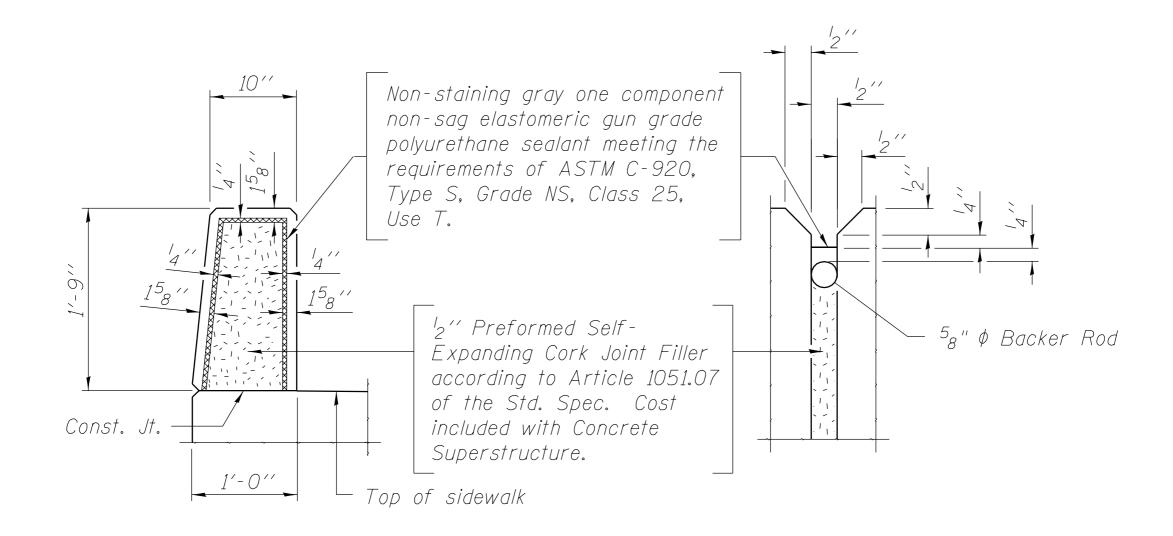


Cell Name: PARJNT Descrip: Parapet Joint Details



PARAPET JOINT DETAILS

Cell Name: PARJNTI Descrip: Parapet Joint at Sidewalk



PARAPET JOINT DETAILS

Cell Name: PII Descrip: Removal and Disposal of Unsuitable Material

> Removal and Disposal of Unsuitable Material

Cu. Yd.



Cell Name: P13 Descrip: Stone Riprap, Class A

Stone Riprap, Class A

Sq. Yd.

Cell Name: P14 Descrip: Stone Dumped Riprap, Class A Stone Dumped Riprap, Class A Sq. Yd. Cell Name: P15 Descrip: Filter Fabric for use with Riprap Filter Fabric for use with Riprap Sq. Yd.





Cell Name: P18 Descrip: Concrete Removal Concrete Removal Cu. Yd. Cell Name: P19 Descrip: Bridge Handrail Removal Bridge Handrail Removal Foot Cell Name: PIIO Descrip: Handrail Concrete Removal Handrail Concrete Removal Foot Cell Name: PIII Descrip: Removal of Existing Concrete Deck Removal of Existing Concrete Deck Each Cell Name: P112 Descrip: Structure Excavation Structure Excavation Cu. Yd. Cell Name: P1/3 Descrip: Cofferdam Excavation Cofferdam Excavation Cu. Yd.



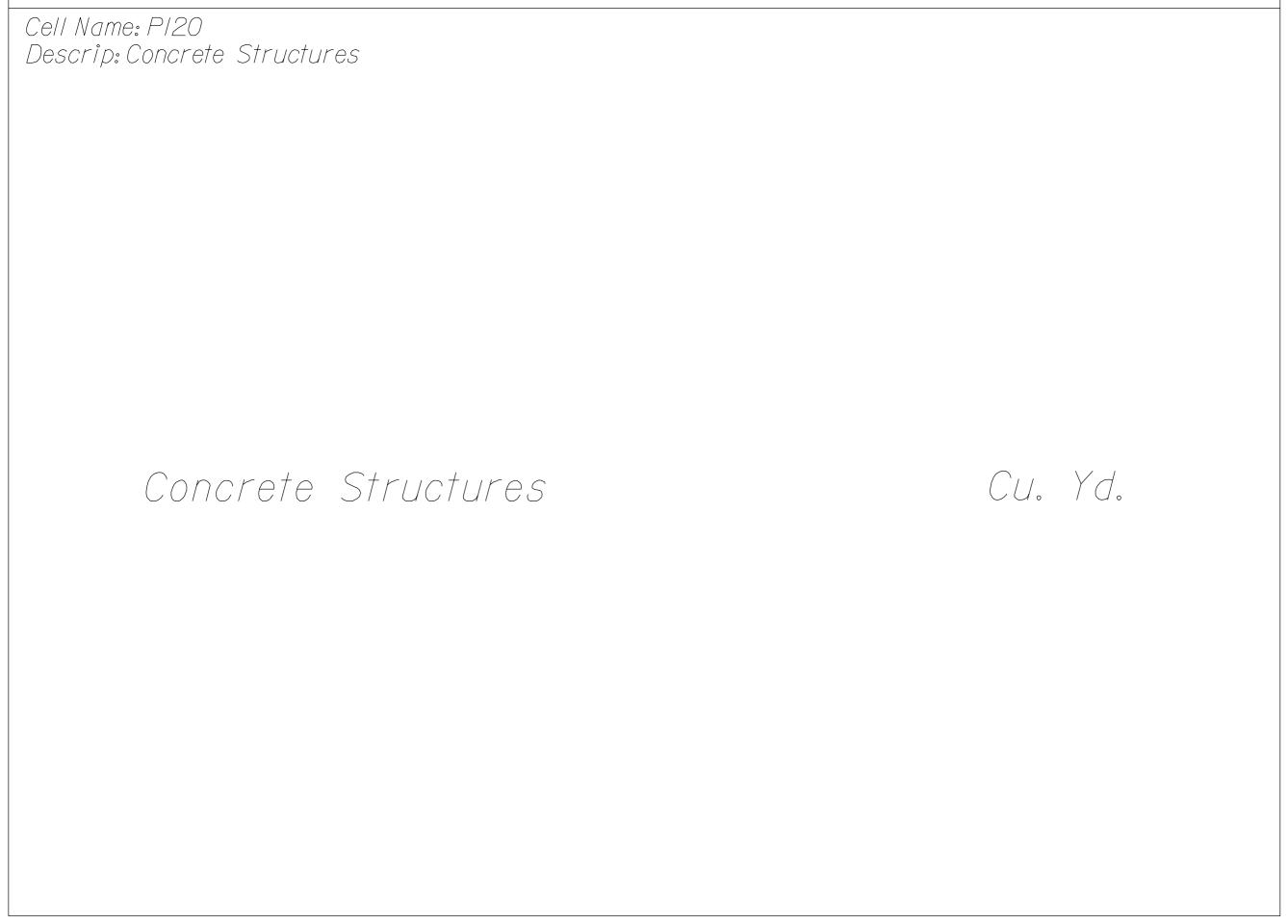
Cell Name: P115 Descrip: Cofferdams Cofferdams Each Cell Name: P116 Descrip: Driving Steel Piles Driving Steel Piles Foot Cell Name: PII7 Descrip: Floor Drains

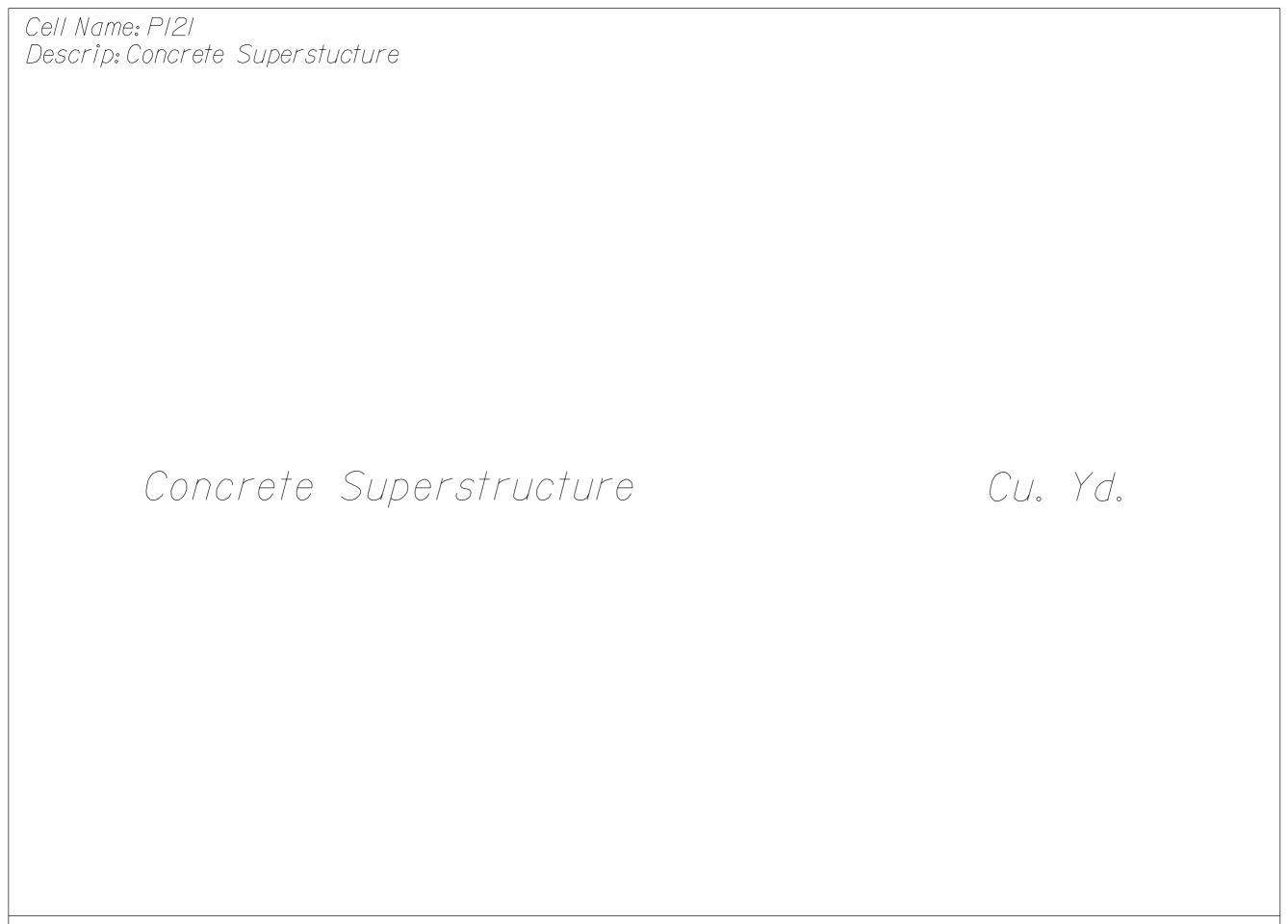
Floor Drains

Each



Cell Name: P119 Descrip: Neoprene Expansion Joint " Neoprene Expansion Joint // Foot





Descrip: Bridge Deck Grooving

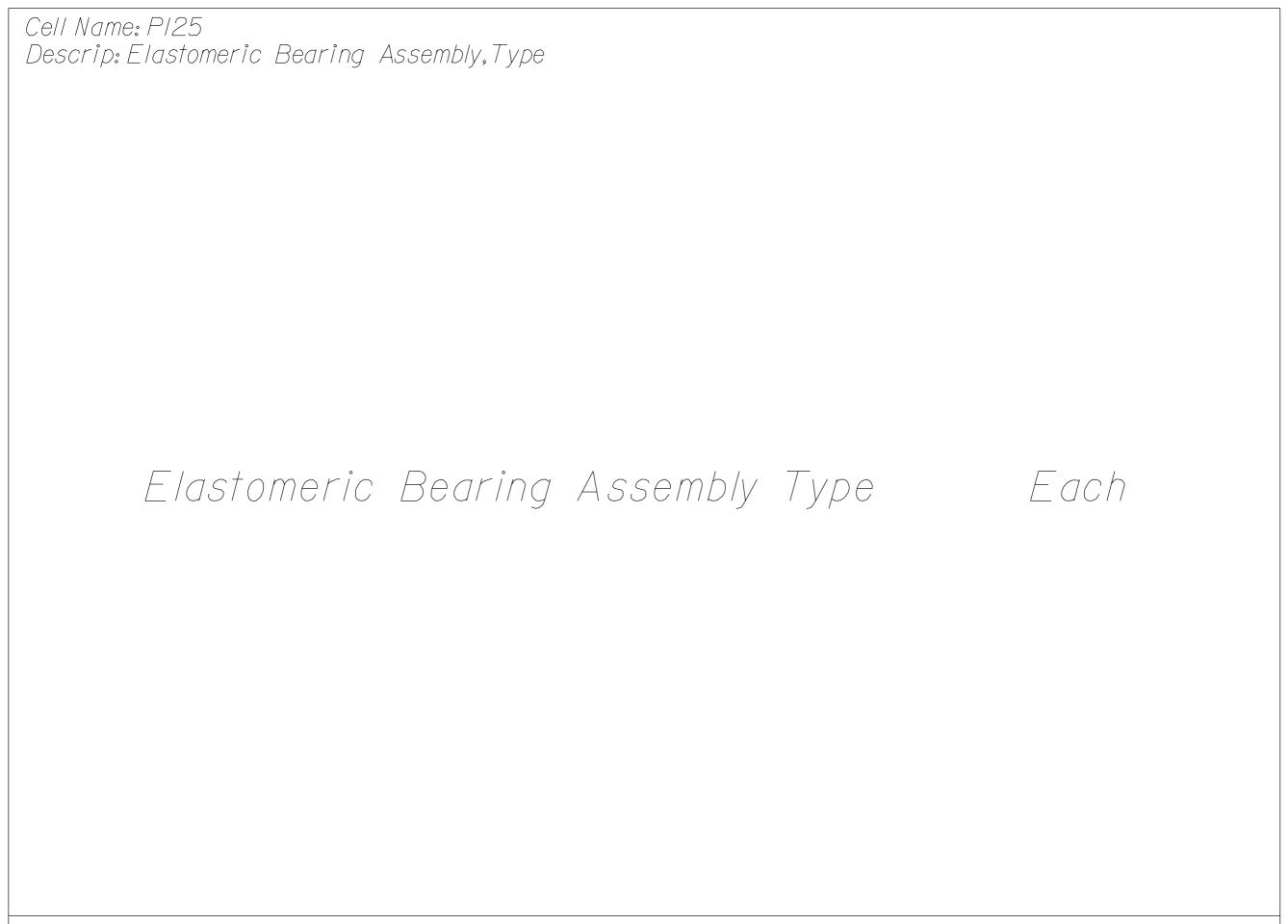
Bridge Deck Grooving

Sq. Yd.

Cell Name: P123 Descrip: Seal Coat Concrete Seal Coat Concrete Cu. Yd. Cell Name: P124 Descrip: Protective Coat

Protective Coat

Sq. Yd.



Descrip: Precast Prestressed Concrete Deck Beams ("Depth)

Precast Prestressed Concrete Deck Beams ( '' Depth)

Sq. Ft.

Cell Name: P127 Descrip: Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams

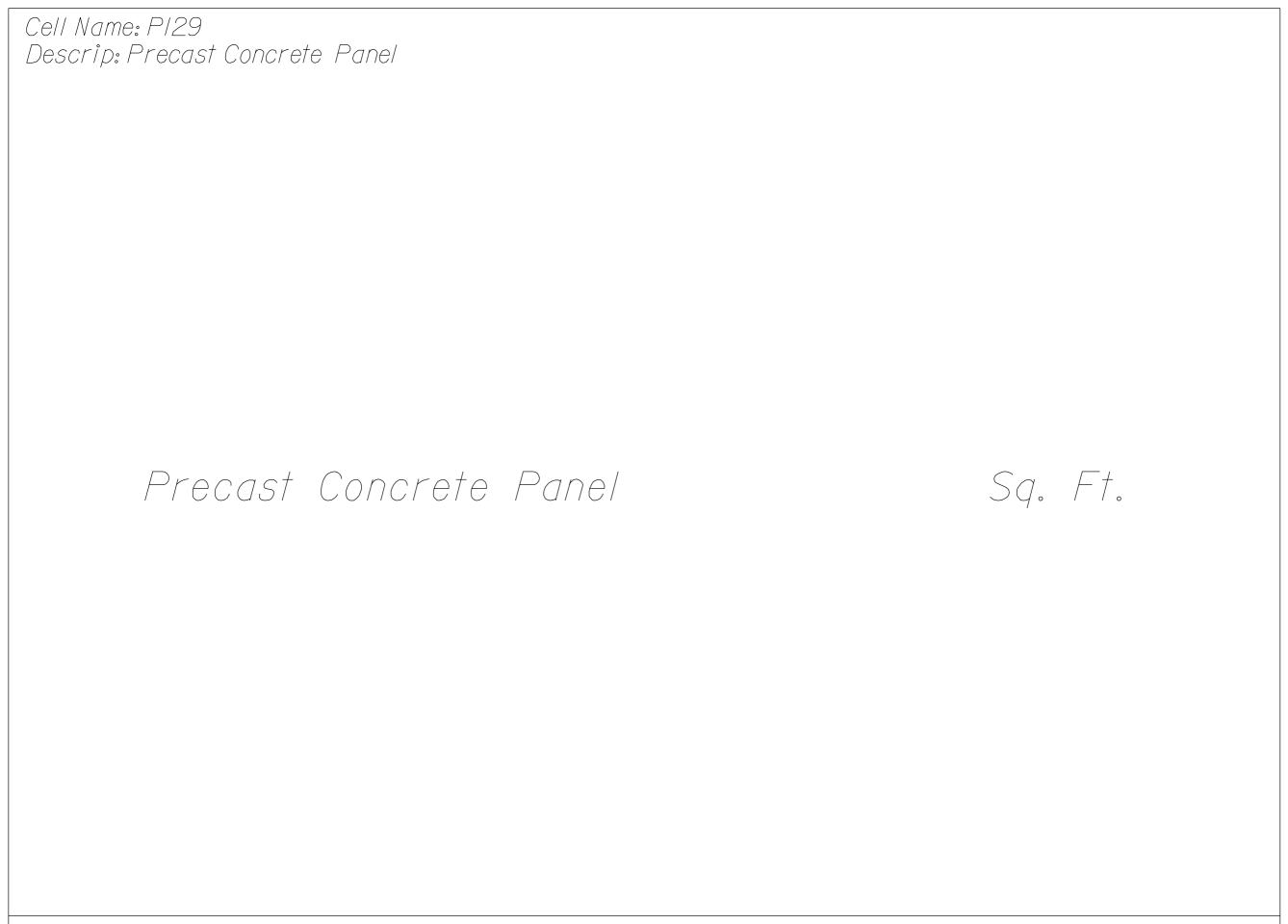
> Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams

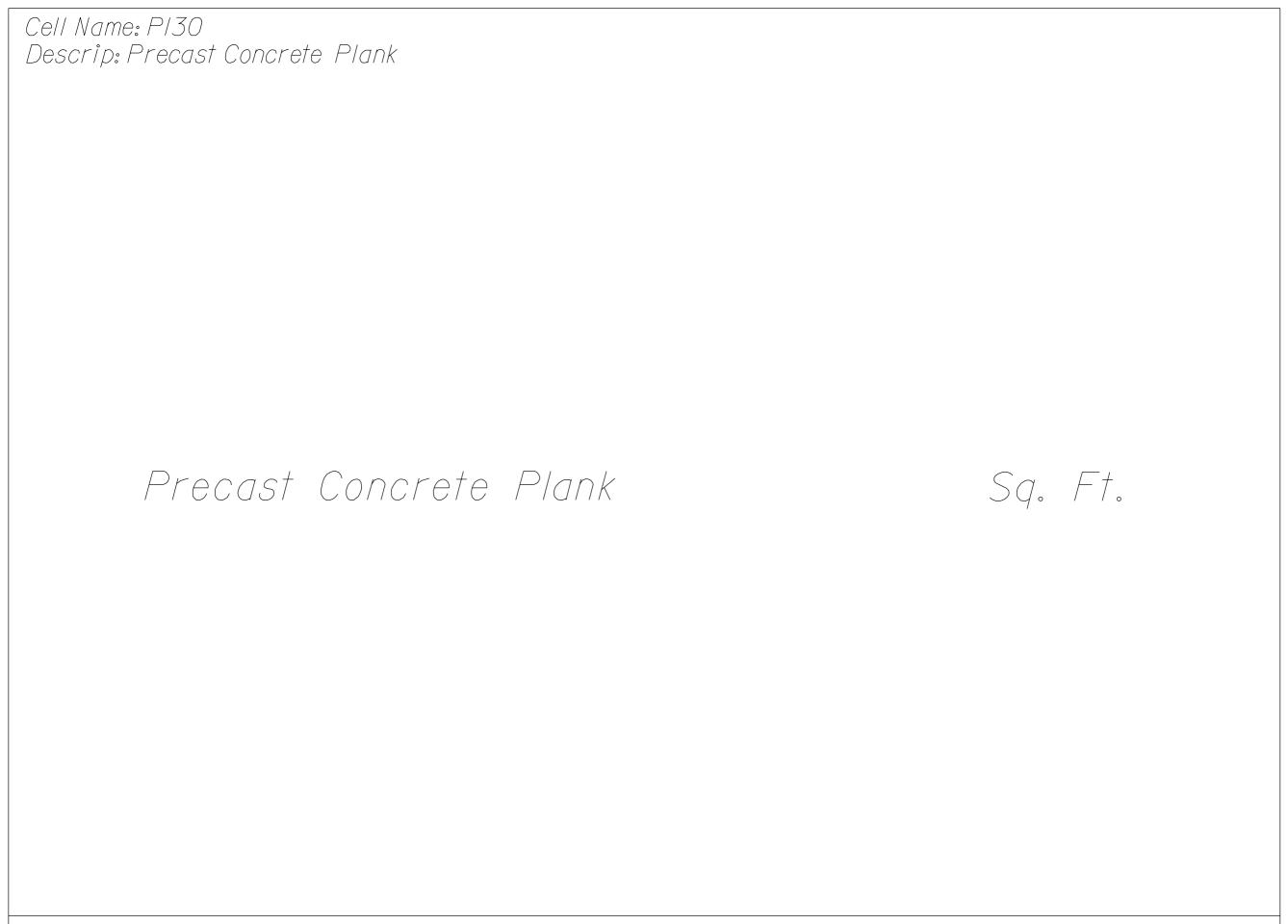
Foot

Descrip: Furnishing and Erecting Precast Prestressed Concrete I Beams, "

Furnishing and Erecting Precast Prestressed Concrete I Beams, "

Foot





Cell Name: P131 Descrip: Precast Prestressed Concrete Plank Precast Prestressed Concrete Plank Sq. Ft. Cell Name: P132 Descrip: Furnishing and Erecting Structural Steel

> Furnishing and Erecting Structural Steel

L. Sum

Descrip: Furnishing and Erecting Structural Steel

Furnishing and Erecting Structural Steel

Pound

Cell Name: P134 Descrip: Stud Shear Connectors Stud Shear Connectors Each Cell Name: P135 Descrip: Structural Steel Repair Structural Steel Repair Pound Cell Name: P136
Descrip: Cleaning and Painting Steel Bridge No.

Cleaning and Painting Steel Bridge No.

L. Sum

Cell Name: P137 Descrip: Reinforcement Bars Reinforcement Bars Pound



Cell Name: P139 Descrip: Aluminum Railing, Type L Aluminum Railing, Type L Foot Cell Name: P140 Descrip: Steel Railing, Type Steel Railing, Type Foot Cell Name: P141 Descrip: Steel Bridge Rail Steel Bridge Rail Foot

Descrip: Slopewall Inch

Slopewall Inch

Sq. Yd.



Cell Name: P144 Descrip: Furnishing Steel Piles HP x

Furnishing Steel Piles HP x

Foot

Cell Name: P145 Descrip: Furnishing Concrete Piles Furnishing Concrete Piles Foot Cell Name: P146 Descrip: Driving and Filling Shells Driving and Filling Shells Foot Cell Name: P147 Descrip: Driving Concrete Piles Driving Concrete Piles Foot

Descrip: Test Pile Metal Shells

Test Pile Metal Shells

Each

Cell Name: P149 Descrip: Test Pile Steel HP x

Test Pile Steel HP x

Each

Cell Name: P150 Descrip: Test Pile Concrete Test Pile Concrete Each Cell Name: P151 Descrip: Metal Shoes

Metal Shoes

Each

Cell Name: P152 Descrip: Steel Sheet Piling Sq. Ft. Steel Sheet Piling

Cell Name: P153
Descrip: Temporary Sheet Piling

Temporary Sheet Piling

Sq. Ft.

Cell Name: P154 Descrip: Temporary Bridge Rail Temporary Bridge Rail Foot Cell Name: P155 Descrip: Name Plates Name Plates Each Cell Name: P156 Descrip: Expansion Bolts 3/4 Inch

Expansion Bolts 3/4 Inch

Each

Cell Name: P157 Descrip: Concrete Box Culverts Concrete Box Culverts Cu. Yd.



Cell Name: P159 Descrip: Sand Backfill Sand Backfill Cu. Yd. Cell Name: P160

Descrip: Bridge Seat Sealer

Bridge Seat Sealer

Sq. Ft.

Cell Name: P161 Descrip: Epoxy Crack Sealing Epoxy Crack Sealing Foot Cell Name: P162 Descrip: Temporary Concrete Barrier Temporary Concrete Barrier Foot Cell Name: P163 Descrip: Floating Bearing, Guided Expansion Floating Bearing, Guided Expansion Each Cell Name: P164 Descrip: Floating Bearing, Non-Guided Expansion Floating Bearing, Non-Guided Expansion Each Cell Name: P165 Descrip: Floating Bearing, Fixed Floating Bearing, Fixed Each Cell Name: P166

Descrip: Drainage Scupper, DS-12

Drainage Scuppers, DS-12

Each

Cell Name: P167 Descrip: Drainage Scuppers, DS-33 Drainage Scuppers, DS-33 Each Cell Name: P168 Descrip: Bridge Joint System (Expansion) Bridge Joint System (Expansion) Foot Cell Name: P169 Descrip: Bridge Joint System (Fixed) Bridge Joint System (Fixed) Foot Cell Name: P170 Descrip: Drainage Scuppers, DS-11 Drainage Scuppers, DS-11 Each Cell Name: P171 Descrip: Bar Splicers

Bar Splicers

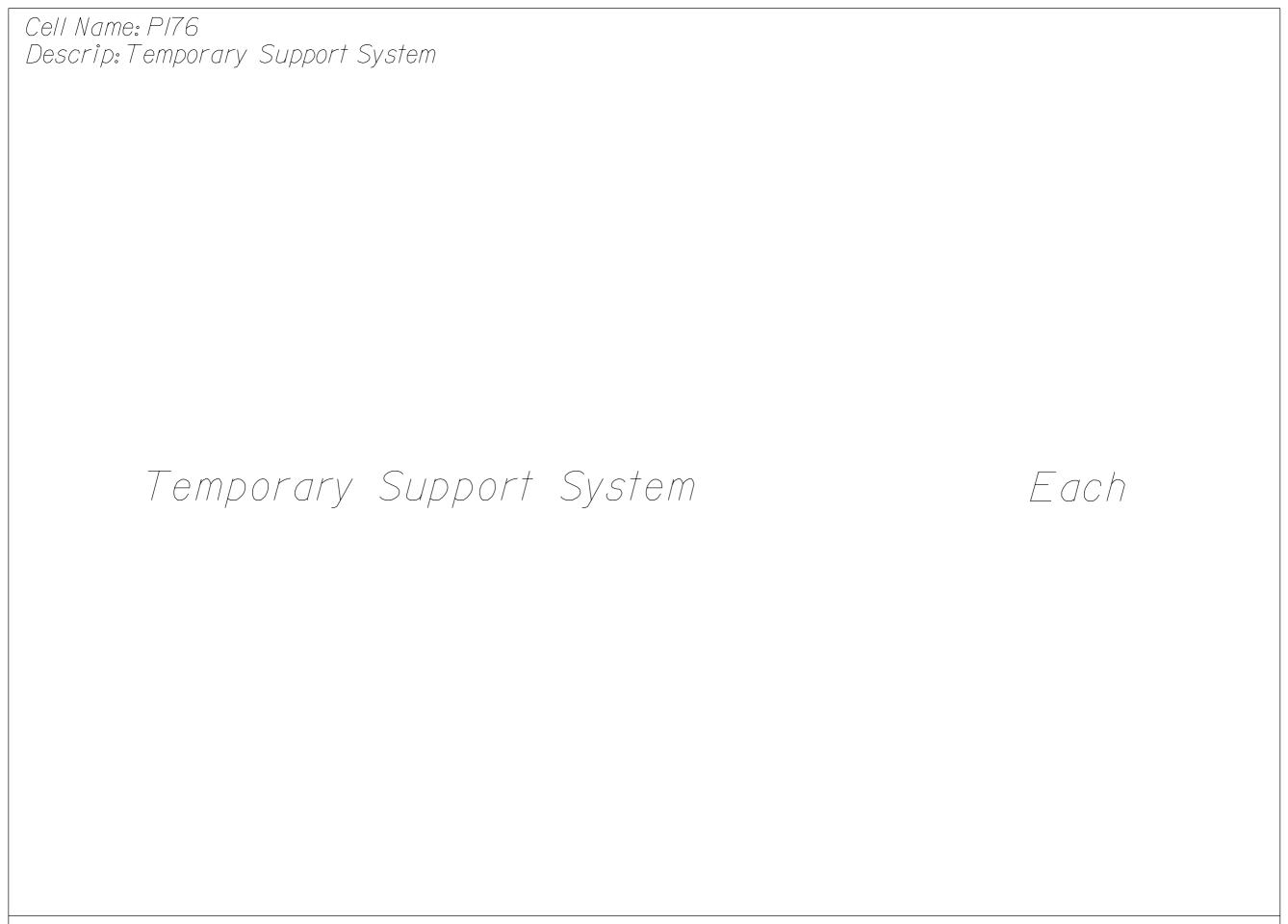
Each

Cell Name: P172 Descrip: Drilled Shaft in Soil "Dia. Drilled Shaft in Soil "Dia. Foot Cell Name: P173 Descrip: Drilled Shaft in Rock "Dia.

Drilled Shaft in Rock "Dia.

Foot

Cell Name: P174 Descrip: Drainage System Drainage System L. Sum Cell Name: P175 Descrip: Jacking and Cribbing Jacking and Cribbing Each

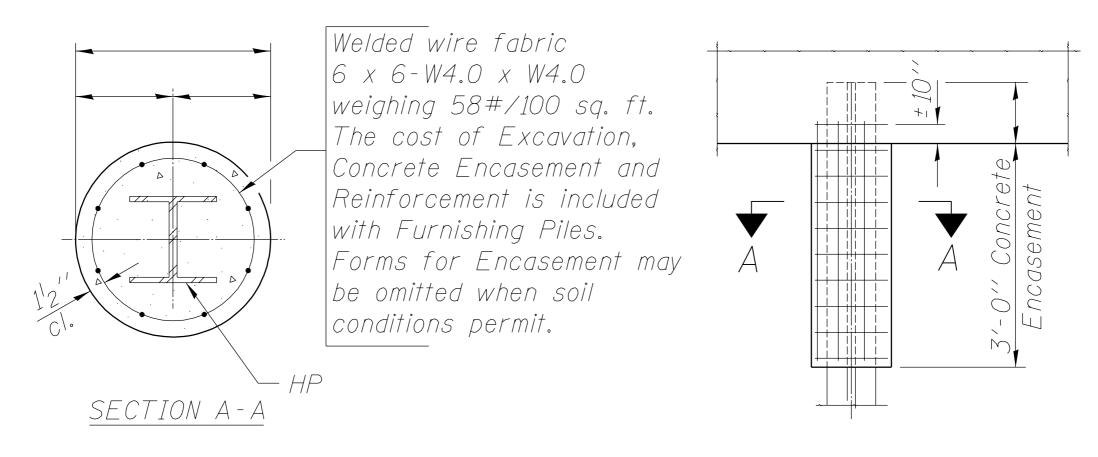


Cell Name: P177
Descrip: Temporary Wall Bracing System

Temporary Wall Bracing System

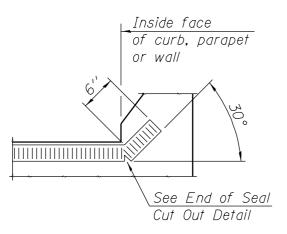
L. Sum

Cell Name: PILENC Descrip: Pile Encasement Details

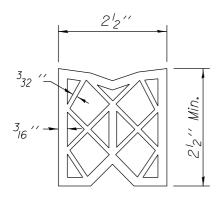


PILE ENCASEMENT DETAIL

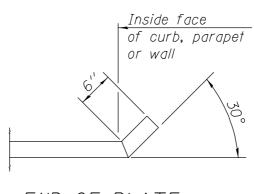
Cell Name: PJS Descrip: PJS details



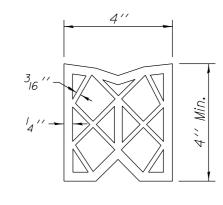
END OF SEAL



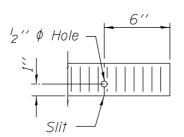
PREFORMED JOINT SEAL (21/2")



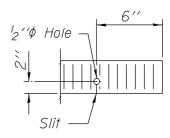
END OF PLATE



PREFORMED JOINT SEAL (4")

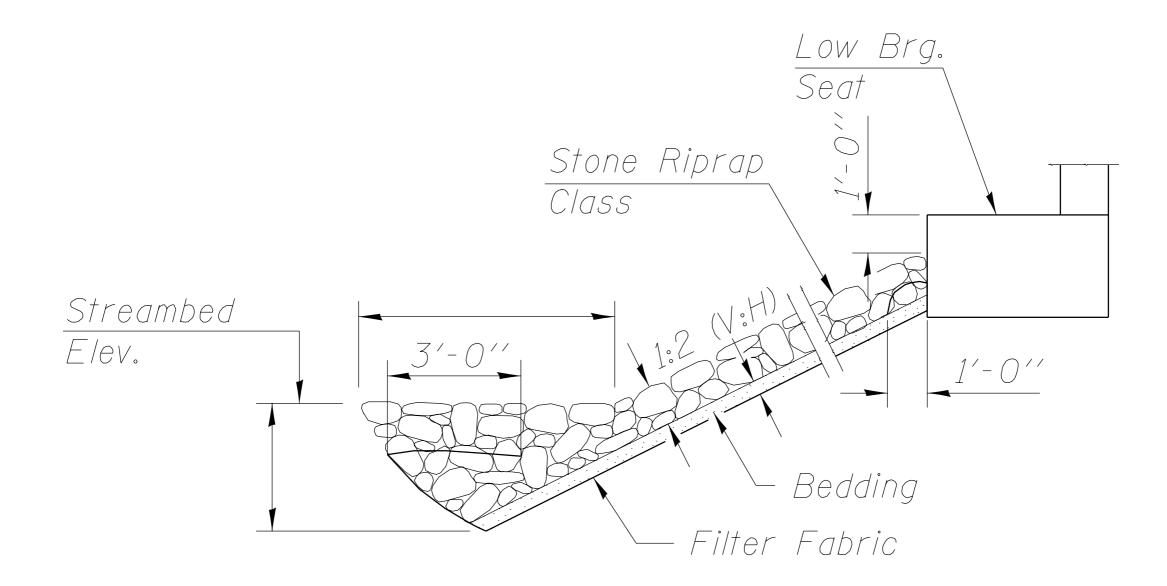


SEAL CUT-OUT



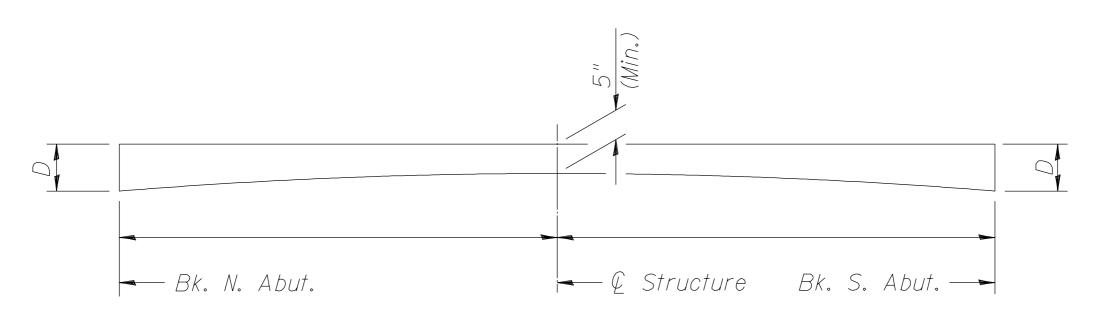
<u>SEAL CUT-OUT</u>

Cell Name: RRAP Descrip: Riprap anchor detail



STONE RIPRAP ANCHOR DETAIL

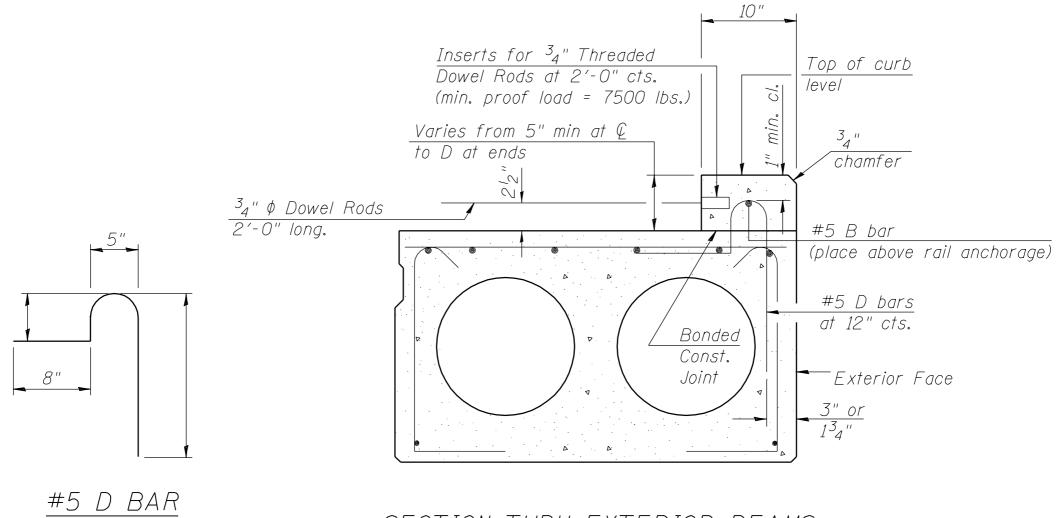
Cell Name: SMROIE Descrip: Side mount rail details for PPC deck beams with concrete wearing surface



REINFORCED CONCRETE WEARING SURFACE PROFILE

D = 5" + Camber

Cell Name: SMR02E Descrip: Side mount rail details for PPC deck beams with concrete wearing surface



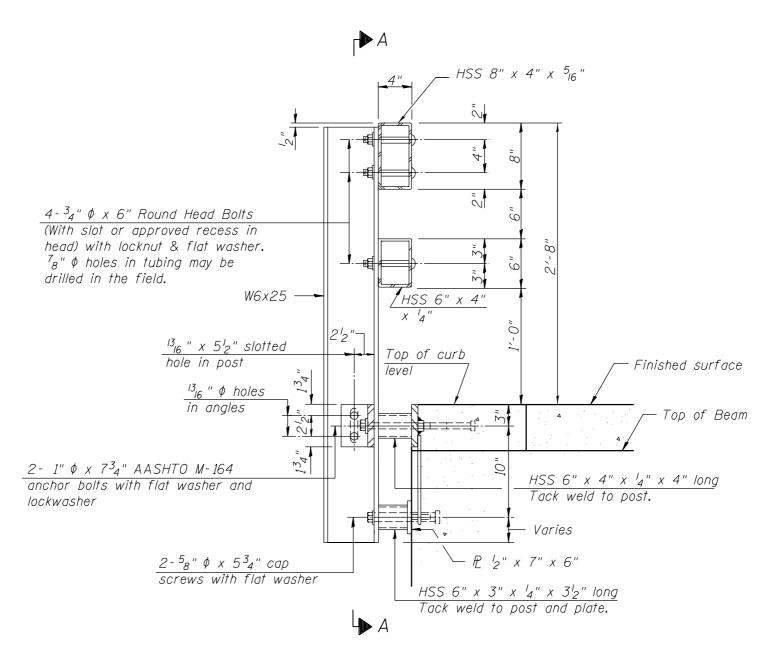
## SECTION THRU EXTERIOR BEAMS

See Section Thru Interior Beams for strand pattern, dimensions and bar call outs.

Cell Name: SMR03E Descrip: Side mount rail details for PPC deck beams with concrete wearing surface

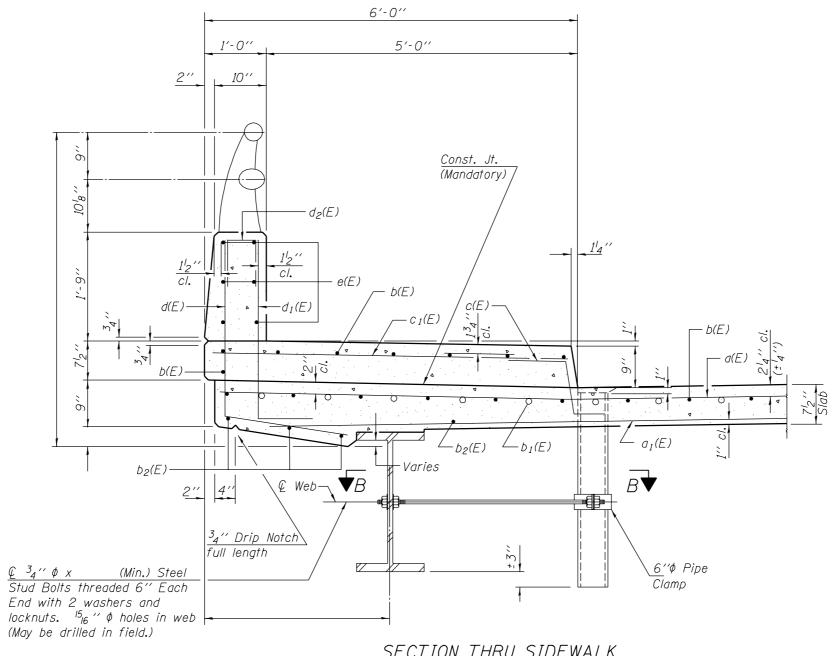
Bridge rail inserts shall be cast in precast beams and curbs. Curbs shall be cast by the precast prestressed concrete supplier after strands have been released and prior to shipping the beam. The concrete in the curb shall be the same as specified for the deck beams.

The curb inserts and threaded dowel rods may be either epoxy coated or galvanized and the cost shall be included with precast prestressed concrete deck beams.



SECTION AT RAIL POST

Cell Name: SWSEC Descrip: Section thru sidewalk



SECTION THRU SIDEWALK

INTERIOR GIRDER MOMENT TABLE	2
Is (in4) Ic (n) (in4) Ic (3n) (in4) Ss (in3)	2
Ic (n)     (in4)       Ic (3n)     (in4)       Ss     (in3)	
Ic (3n) (in <sup>4</sup> ) Ss (in <sup>3</sup> )	
Ss (in 3)	
$Sc(n)$ $(in^3)$	
$Sc(3n)$ $(in^3)$	
Z (in 3)	
Q (k/ft.)	
MP ('k)	
sQ (k/ft.)	
MsQ ('k)	
M4 ('k)	
M (Imp) ('k)	
<sup>5</sup> <sub>3</sub> [M½+M(Imp)] ('k)	
Ma ('k)	
Mu ('k)	
fs@non-comp(k.s.i.)	
fs@(comp) (k.s.i.)	
$fs_3(4+Imp)$ (k.s.i.)	
fs (Overload) (k.s.i.)	
fs (Total) (k.s.i.)	
VR (k)	

INTERIOR GIRDER REACTION TABLE								
		Abut.	Pier	Abut.				
R₽	(k)							
R4	(k)							
Imp.	(k)							
R (Tota	l) (k)							

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

 $Ic_{(n)}$  and  $Sc_{(n)}$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

 $Ic_{(3n)}$  and  $Sc_{(3n)}$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

 $Ma^{\prime}(Applied\ Moment)=1.3[M\ P\ +\ Ms\ P\ +\ ^5_3(M\ +\ M(Imp))].$ 

The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.

fs (Overload) is the sum of the stresses due to M2 + Ms2 +  $^5_3$ (M½ + M(Imp)).

fs (Total) (Non-compact section) is the sum of the stresses due to 1.3[M $^{\circ}$  +  $Ms^{\circ}$  +  $5_{3}$ (M $^{\circ}$  + M(Imp))].

Cell Name: TABLE2
Descrip: LFD moment and reaction tables with notes for PPC beams

INTERIOR BEAM MOMENT TABLE							
	0.4 Sp. #1	Diag 1 ag 0	05.00 #0				
	0.6 Sp. #3	Pier 1 or 2	0.5 Sp. #2				
Strand Pattern							
I (in <sup>4</sup> )							
I' (in <sup>4</sup> )							
$S_b$ (in <sup>3</sup> )							
$S_{b}'$ (in <sup>3</sup> )							
$S_t$ (in <sup>3</sup> )							
$S_t$ (in <sup>3</sup> )							
Q (k/')							
M Q ('k)							
s Q (k/')							
Ms? ('k)							
M ½ ('k)							
M ( $Imp$ ) ('k)							

INTERIOR BEAM REACTION TABLE						
	Abut.	Pier 1 Span 1	Pier 1 Span 2			
	Abui.	Pier 2 Span 3	Pier 2 Span 2			
RQ (k	)					
RsQ (k	)					
R Ł (k	)					
Imp. (k	)					
R (Total) (k	)					

I and I' are the moment of inertia and composite moment of inertia of the beam section.

 $S_b$  and  $S_b{'}$  are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.

 $S_t$  and  $S_{t'}$  are the non-composite and composite section modulus for the top fiber of the prestressed beam.

Cell Name: TABLE3
Descrip: LRFD moment and reaction tables with notes for steel beams

INTERIC	PR GIF							
		0.4	Sp.	1 or	0.6	Sp.	2	Pier 1
Is	(in <sup>4</sup> )							
Ic (n)	(in <sup>4</sup> )							
Ic (3n)	(in <sup>4</sup> )							
Ss	(in <sup>3</sup> )							
Sc (n)	(in <sup>3</sup> )							
Sc (3n) Z	(in <sup>3</sup> )							
Z	(in <sup>3</sup> )							
DC1	(k/')							
M DC1	('k)							
DC2	(k/')							
M DC2	('k)							
DW	(k/')							
M DW	('k)							
M 4+Imp	('k)							
Ma (Strength I)	('k)							
Mr	('k)							
fs DC1	(ksi)							
fs DC2	(ksi)							
fs DW	(ksi)							
fs 1.3(4+I)	(ksi)							
fs (Service II)	(ksi)							
fs (Total)(Strength I)	(ksi)							
Vsr	(k)			•				

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs due to non-composite loads.

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing fs due to short-term composite loads.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing fs due to long-term composite loads.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

DC1 is the dead load acting on the non-composite section.

 ${\it DC2}$  is the dead load acting on the long-term composite section.

DW is the dead load acting on the long-term composite section due to wearing surface.

Ma (Strength I)=1.25 M(DC1+DC2)+1.5 M DW +1.75 M(4+Imp)

Mr is the full plastic moment capacity computed in accordance with 6.10.3.1.3 and 6.10.4.2.2.

fs (Service II) is the sum of the stresses due to  $DC1+DC2+DW+1.3(\mbox{$\psi$+Imp})$ 

fs (Total) (Strength I) (Non-Compact Section) is the sum of the stresses due to 1.25(DC1+DC2)+1.5DW+1.75(L+Imp)

Vsr is the maximum shear range in the span (0.75 ½+Imp)

INTERIOR GIRDER REACTION TABLE							
HL93 Loading							
Abutment Pier							
R DC1	(k)						
R DC2+DW	(k)						
R 4	(k)						
R Imp	(k)						
R Total	(k)						

Cell Name: TABLE4

Descrip: LRFD moment and reaction tables with notes for PPC beams

	INTERIOR BE	EAM	MOM	ENT	TAE	3LE		
		0.4	Sp.	1 or	0.6	Sp.	2	Pier 1
I	(in <sup>4</sup> )							
I'	(in <sup>4</sup> )							
Sb	(in3)							
Sb'	(in <sup>3</sup> )							
St	(in <sup>3</sup> )							
St'	(in <sup>3</sup> )							
DC1	(k/')							
M DC1	('k)							
DC2	(k/')							
M DC2	('k)							
DW	(k/')							
M DW	('k)							
M4 + Imp	('k)							

I and I' are the moment of inertia and composite moment of inertia of the beam section.

INTERIOR BEAM REACTION TABLE							
HL93 Loading							
	Abutment Pier						
R	DC1	(k)					
R	DC2+DW	(k)					
R	4	(k)					
R	Imp	(k)					
R	Total	(k)					

 $S_b$  and  $S_{b'}$  are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.

 $S_t$  and  $S_{t'}$  are the non-composite and composite section modulus for the top fiber of the prestressed beam.

 $<sup>{\</sup>it M}$  Imp is the moment due to live load impact on the composite section.

DC1 is the dead load acting on the non-composite section.

DC2 is the dead load acting on the long-term composite section.

DW is the dead load acting on the long-term composite section due to wearing surface.

Cell Name: TMPBRR Descrip: Temporary Concrete Barrier

